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RESTORING AMERICA'S COMPETITIVE EDGE: A NORTH CAROLINA PERSPECTIVE

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BEFORE THE

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CONTENTS

STATEMENTS BY MEMBERS OF CONGRESS

Page
Senator Sanford ... 1
Representative Tim Valentine ... 4
Representative David E. Price ... 6

WITNESSES

MacCormac, Earl R., science adviser to Gov. James Martin of North Carolina ... 8
Jordan, Hon. Robert B., III, Lieutenant Governor of North Carolina ... 22
Hughes, Donald, vice chairman, Burlington Industries ... 26
Beilman, Donald S., president, Microelectronics Center of North Carolina ... 29
Forlines, John A., chairman, North Carolina State Board of Community Colleges ... 35
Dowell, Earl H., dean, School of Engineering, Duke University ... 40

STATEMENTS SUBMITTED FOR THE RECORD

Sasser, Jim, U.S. Senator from Tennessee ... 12
Chiles, Lawton, U.S. Senator from Florida, and chairman, Senate Budget Committee ... 13
Brock, John C., commissioner, Department of Labor, State of North Carolina ... 18

ADDITIONAL MATERIAL

North Carolina Commission on Jobs and Economic Growth—A report ... 44

RESTORING AMERICA'S COMPETITIVE EDGE: A NORTH CAROLINA PERSPECTIVE

FRIDAY, MARCH 20, 1987

U.S. SENATE,
COMMITTEE ON THE BUDGET,
Research Triangle Park, NC.

The committee met, pursuant to notice, at 10:00 a.m., in the auditorium of the Microelectronics Center of North Carolina, 3021 Cornwallis Drive, Research Triangle Park, North Carolina, Hon. Terry Sanford presiding.

Present: Senator Sanford.

Staff present: David E. Poisson, Legislative Counsel to Senator Sanford; Lance Simmens, Chief Economic Counsel to Senator Sasser.

OPENING STATEMENT OF SENATOR SANFORD

Senator SANFORD. This is a meeting of the Senate Budget Committee, which is holding hearings here and in other parts of the country for the express purpose of more specifically defining the word "competitiveness" and what it may mean to the future of our Nation's economic position in the world.

The President has declared, as have a great many other people in Washington, that the greatest single need for this country, in terms of its economic development, is competitiveness, but nobody quite knows what competitiveness means.

HUMAN COMPETITIVENESS THE FACTOR

There are members of the Budget Committee who talk about competitiveness in terms of specific trade restrictions, trade policy, or our trade deficit; members concerned with competitiveness in terms of commerce; and members concerned with competitiveness in various other respects. I am more directly concerned, though not exclusively, with competitiveness in human terms—that is, how do we help our citizens become more competitive by their own training, by enhancing their own capabilities, and by just plain working smarter.

I'm sorry that Senator Sasser could not be here today. He, too, is a member of the committee and was scheduled to be with me, but because of a scheduled rollcall vote was forced to cancel at the very last moment.

I am certainly pleased, however, to be able to welcome all of the distinguished people that are here, those of you who are here as witnesses as well as those of you here in the audience.

I also want to thank all of you for not only being here, but for the influence that you carry to all parts of North Carolina, and in addition to welcoming you here, I want to welcome all of you who are watching this hearing in remote sites which have been set up at Duke and U.N.C. at Chapel Hill, North Carolina State and North Carolina A & T in Greensboro, U.N.C. at Charlotte, and the Research Triangle Institute.

TRIANGLE PARK EXAMPLE OF WHAT'S NEEDED

There is probably no more important issue we face in the Congress than competitiveness and, in my view, no better place to come to discuss it than Research Triangle Park.

In many ways, Research Triangle Park is exactly what the competitiveness experts say we need. It is an idea as much as it is a place—an idea born of the need for North Carolina to diversify and reorient its economy, built on a belief in the importance of education, and nurtured over the years by cooperation among business, government, and academia.

If we in this country are again going to become truly competitive with our major trading partners, we are going to have to pursue a strategy not unlike the one adopted here. It's a strategy of schools, businesses, and government working together to strengthen the Nation's economy.

It won't be easy. Ideas of this magnitude require considerable commitment and hard work on many different fronts.

EDUCATION NEEDS

In education, for example, we must commit ourselves soon to improving the quality of our schools, or we run a very real risk of falling so far behind that it will take us decades to recover. We will have lost that much ground. In fact, there is a good bit of data that show we are already falling dangerously behind our foreign competitors in many areas of academic achievement.

A 1982 Department of Education study showed that 13 percent of American adults were functionally illiterate, while in Japan illiteracy is virtually unknown; and this despite the fact that just to read a newspaper the Japanese have to memorize 3,000 different written characters.

Between 1955 and 1983 the number of undergraduate degrees we conferred in engineering increased from roughly 23,000 to 67,000. In Japan over the same period, the number of undergraduate engineering degrees rose from less than 10,000 to more than 73,000.

And in 1984, over 43 percent of the doctoral degrees in engineering that were awarded in the United States went to non-resident foreigners. By contrast, since 1980 the average number of Americans receiving doctoral degrees in engineering overseas has been only 12.

PRODUCTIVITY GROWTH

We're also falling behind in other areas. In the period from 1973 to 1985, the annual rate of productivity growth for the entire United States economy was 0.4 percent—one-eighth the rate of

Japan, one-fifth that of France and Germany, and one-quarter that of Italy.

It's time for Americans to roll up their sleeves and go to work. As a Nation, we can no longer rely on the oceans or on our abundant national resources for protection against foreign competition. We must begin to rely more on the abilities and imagination of our people and on the knowledge and discoveries they are able to provide.

Put simply, our challenge is not only to improve our economic competitiveness but to make our entire society more competitive as well.

RESEARCH AND DEVELOPMENT

We must also invest more in science and research. The Federal Government continues to fund about half of all the research and development that goes on in this country, but an increasing share of what we spend goes to defense. From 1975 to 1980 about half of all federally funded research and development went to defense; by 1985 defense was receiving almost 75 percent. At the same time, research and development support to non-defense agencies declined sharply.

This can't continue.

As we look to the Nation's needs in the next decade, the goals of improved productivity and a more competitive American society will require a larger amount of the Nation's research and development effort to go to basic and applied research.

Our Nation must be armed with no less educational software than it has military hardware. We must again become a Nation of strong ideas as well as a Nation of strong weapons.

THE NATIONAL DEBT

And finally, but perhaps most importantly, we must get our financial house in order. In the last six years alone, our federal deficit has tripled. We now have a debt of more than $2 trillion. Interest on that debt exceeds $200 billion a year and annual budget deficits have been running well above $200 billion.

To deal responsibly with this Nation's long-term structural deficit will require an imaginative legislative strategy aimed not only at reducing Federal spending, but also at creating new, well-paying jobs, new markets for our goods, and new opportunities for our people to grow.

Imagination requires something more than just simple budget cutting. It requires a set of priorities around which a new consensus can be built—a consensus built on a belief in our workers, belief in our country, and above all belief in our future. We in this country—Democrats and Republicans alike—must demonstrate we have the vision to forge such a consensus and more importantly, the commitment to make it work.

The question we face now is, how do we go about deciding what our priorities should be? How do we choose, and what do we choose, in order to make America as competitive as it can be?

These are the questions we will put to you this morning. We look forward to your ideas and your suggestions about what we in the

Congress ought to be doing to replicate throughout the Nation the achievements you have had here in North Carolina.

Joining us today for this Senate Budget Committee hearing is Lieutenant Governor Bob Jordan, who has provided significant leadership in this state by his service on the North Carolina Commission on Jobs and Economic Growth. We are also pleased to have with us this morning Congressman Tim Valentine of this district and Congressman David Price, the newly elected representative from the 4th district, both of whom serve on the House Committee on Science, Space and Technology.

We are also fortunate to have with us Dr. Earl Mac Cormac who is science advisor to Governor Martin. We're delighted to have you with us and delighted to have the Governor's interest. As many of you may know, Dr. Mac Cormac comes from a distinguished science and academic background. He's a professor of philosophy at Davidson College, an adjunct professor of engineering at North Carolina State University, and has been a visiting professor at a number of universities over his career, including M.I.T. so he brings to his job much experience and much talent, that I know is already and will continue to be of great benefit to North Carolina, and again I welcome you.

I look at my colleagues, Representative Price and Representative Valentine, as really being part of the group from Congress here to talk to you and to listen to you and to learn from you as they, too, attempt to put together the elements that we need in setting the priorities that will make this Country more competitive.

I now would like to turn this part of the program over to these three gentlemen and if there is not some agreement among you about which of you will start, I'll start with our senior colleague, Representative Valentine.

STATEMENT OF HON. TIM VALENTINE, U.S. REPRESENTATIVE IN CONGRESS FROM NORTH CAROLINA

Mr. Valentine. I'm delighted to have this opportunity to participate in this hearing, and I want to commend you for organizing this Panel, and I want to thank Don Beilman for making the outstanding facilities here at the Microelectronics Center of North Carolina available to us on this occasion.

COMPETITIVENESS OVER-WORKED CATCH PHRASE

The competitiveness of American industry, the subject of this hearing, has become an overworked catch-phrase that sometimes seems to have more meaning as a public relations expression than as a real question of public policy. It seems to have become an abstract concept to be debated by economists, by trade experts and politicians without any particular connection to the average citizen.

But competitiveness is not just a buzz word. Declining American competitiveness affects people directly. Declining American competitiveness means North Carolina textile workers whose jobs are lost to subsidize protected foreign manufacturers. Declining American competitiveness means, in the long run, higher prices for American consumers when entire American industries have succumbed to overseas competition. Declining American competitiveness means shrinking resources to pay for vital domestic programs. Declining American competitiveness means reliance on foreign manufacturers for critical, highly sensitive military equipment.

Some commentators have shrugged off the problem, saying that we are simply in a period of change and that lost manufacturing jobs will be replaced by jobs in the service sector. I suggest to you that this is a false hope.

SERVICES ARE GM'S LARGEST SUPPLIER

In his testimony before the House Science, Space, and Technology Subcommittee on Science and Research last year, Don Beilman pointed out a striking statistic that had been reported in *Business Week*. According to that article, the single largest supplier for General Motors is not a tire or steel company, but is Blue-Cross Blue-Shield, a service supplier.

But to whom would Blue-Cross/Blue Shield supply its services if its manufacturing customers were no longer in business? We need to maintain a healthy competitive manufacturing sector if we are to avoid a serious decline in every other sector of American life.

NO QUICK FIX FOR COMPETITIVE PROBLEM

There is no quick fix for America's competitiveness problems. We need a coordinated long-term national strategy that includes a more sensible trade policy, adequate support for scientific research, educational incentives to enable American workers to keep pace with the unprecedented pace of technological change, initiatives that encourage innovation and increase productivity, and a realistic and equitable approach to deficit reduction.

Deficit reduction poses an especially difficult problem. The deficit, in and of itself, contributes to declining competitiveness, but it is vital that deficit reduction efforts do not strangle the very programs that could help to cure the problem.

We will find an effective long-range solution only through close cooperation among governments at all levels with private industry and with our educational institutions. This need for coordination is a prime reason for today's hearing. The impressive list of witnesses who will speak this morning are well qualified to describe successful initiatives and to outline the tough questions that need to be asked and the approaches that are likely to work.

GOVERNMENT/INDUSTRY EDUCATION COOPERATION

I've been fortunate to have the opportunity to work with two of these witnesses, Dean Earl Dowell of the Duke University School of Engineering and Don Beilman. Each will, I am confident, add a unique perspective to this Hearing. For example, Don Beilman has developed a plan to use the resources of the Microelectronics Center in a national submicron research and development program involving the government, the semiconductor industry, as well as the university research community.

His concept is designed to enable the United States to make a huge technological leap in the production of microchips. This is a critical challenge for the United States of America. If we do not make this effort, we could witness the continuing decline of our microchip industry and an increase in our already substantial reliance on overseas sources.

I know that I speak for Senator Sanford and for Representative Price in saying that we are lending all of the support that we can muster to Don Beilman's proposal. This question has vital national security, as well as commercial, ramifications. It is essential for the State of North Carolina and for the entire nation that we address this problem quickly. Even advanced semiconductors, just like automobiles and textiles, are vulnerable to foreign competition.

Don Beilman's proposal is just one approach in one industry, but it exemplifies what we can learn here today at this Hearing. As members of the House Science, Space and Technology Committee, David Price and I are both working to use the unique resources of the Research Triangle area to address our national economic problems. This area has much to offer, and this Hearing, Senator, is an excellent start toward making a greater use of the outstanding individuals and institutions in the Triangle. We will be studying the record of this Hearing carefully for ideas that can be implemented at the federal level, and I appreciate very much this opportunity to be here and participate.

Senator SANFORD. Thank you. I now recognize Congressman Price.

STATEMENT OF HON. DAVID E. PRICE, U.S. REPRESENTATIVE IN CONGRESS FROM NORTH CAROLINA

Mr. PRICE. Thank you, Mr. Chairman. It's a pleasure to be here today for this important field hearing of the Senate Budget Committee. I'd like to begin by expressing my appreciation to both Senator Sasser and you, Senator Sanford, for bringing this hearing to Research Triangle Park to hear testimony about the critical issues we all face in trying to maintain and improve America's competitive posture in today's interdependent world economy.

I'd also like to extend a warm welcome to visitors from outside the Research Triangle area. I think we are in Tim's District, actually, but we're not very far from the 4th District, and I think we'd both like to make certain that you know how glad we are to have you here and having this Hearing here.

I also want to thank Don Beilman and the Microelectronics Center for hosting this meeting this morning.

The symbolic importance of discussing the competitiveness issue in this park, a model for economic progress and forward looking cooperation between government, universities, and business, certainly should not escape our attention today. Roughly thirty years ago public spirited and dedicated leaders of this area and state laid the groundwork for this research and economic development enterprise that became known as the Research Triangle Park. Today the Research Triangle Park is widely known and recognized as a highly successful model for promoting economic growth and assisting adaptation to changing economic circumstances. A key ingredient to this success—perhaps the most important one—was the willingness and commitment of business leaders, educators, and government officials to plan and work together over an extended period of time to develop the Research Triangle Park. This spirit of cooperation has continued over the years and is again evident in this hearing.

BUDGET DEFICITS

Beyond the physical location of this hearing, the other important context for this discussion is the continuing sea of red ink and deficit spending upon which the nation's Federal government finds itself adrift. The budget deficit colors nearly every issue which the Congress needs to address—from the ongoing problem of the trade deficit, the continued soundness of the nation's banks and savings and loan institutions, the need to improve educational achievement and resources, and the requirement to insure adequate investment in the future through research and development and public infrastructure expenditures. We cannot and must not continue to mortgage the future of our children and grandchildren by continuing the deficit spending policies of the past six years. We also know that the path back to Federal fiscal health will not be easy nor quick—and will require a hard look at every part of the trillion dollar federal budget. It is a challenge to all of us who hold positions in the Congress this session to seek to balance the needs I mentioned above against the need to restore fiscal sanity to the Federal government's budget accounts. This hearing offers visible evidence that your committee is serious about building the consensus in the Congress and among the American people that will enable us to meet this challenge in the spirit of cooperation and commitment manifest in the development of this park.

My time is short this morning and I think it is important that the other witnesses today have the maximum time to present their views and discuss issues with you. Before I step aside, however, I would like briefly to highlight some important actions and initiatives that I believe will help American companies and business to compete more effectively in the world's marketplace.

STEPS TO COMPETITIVENESS

First, we need to insure that the trade environment in which American companies operate is fair. We can compete on an equal basis with any country if and when the rules of the game are not stacked against us. To this end, I am a cosponsor of H.R. 3, the omnibus trade bill, to help restore fairness for America's companies in today's trading environment. As a part of that bill we just this week reported out of the Economic Stabilization subcommittee of the House Banking Committee, of which I am a member, an initiative to establish a Competitiveness Council—at very modest cost, I might add—to help direct and oversee the government's competitiveness strategies.

Second, I am a cosponsor of H.R. 1154, the Textile and Apparel Trade Act of 1987, to help remedy injuries to the U.S. textile and apparel industries caused by increased imports over the last decade. This bill balances the valid interests of the domestic textile industry with the need to maintain good relations with our trading partners through flexible import limits.

Third, much of my work on the Science, Space, and Technology Committee will be directed to ensuring that adequate resources are available to the science and research communities so that American industry will have access to the best and most up to date research to improve productivity. I have already joined with other members of the committee to urge the House Budget Committee to direct more resources to civilian, rather than weapons-related, research and development. We will also be taking a careful look at the reauthorization of the National Science Foundation to protect the nation's investment in scientific research to aid America's competitive posture.

Finally, but certainly not least important, I am committed to strengthing the tools available to our state and localities to fight the problem of illiteracy—a deficiency that cripples the ability of far too many American workers to compete effectively and productively in the contemporary workplace.

Thank you Senator, for this opporunity to join your important session this morning. I am optimistic that efforts like this will help us move forward on the issue of competitiveness and economic growth so critical to our country's future.

Senator SANFORD. Thank you. I now recognize Dr. MacCormac.

STATEMENT OF EARL R. MAC CORMAC, SCIENCE ADVISER TO NORTH CAROLINA GOVERNOR JAMES MARTIN

Mr. MAC CORMAC. Thank you very much, Senator Sanford, for inviting me. I speak in behalf of Governor Martin who regrets that he could not be here, but who, as it turns out, is cutting a ribbon for a new industry in another part of the State, so I think that speaks well of our competitiveness.

The Governor, as you know, has a Ph.D. in organic chemistry and has a very keen interest in the development of science and technology, and he believes in a bipartisan approach, which is the direction that this government has taken in our efforts to further economic development.

DEVELOPMENT THROUGH RESEARCH AND SCIENCE TECHNOLOGY

I want to talk for a few moments about economic development through research in science and technology, and then I want to shift, Senator, to, if I may, three issues, and I promise I will not package this in the usual 50-minute lecture that professors are accustomed to. You, as President of Duke University, know that most of us who have taught for more than 25 years have this mind set that puts us into 50 minutes, but mercifully, you will be spared this.

Economic development through research in science and technology has a short run and a long run. In the short run, we're interested in products, jobs, the removal of illiteracy and so forth, and the legislature of North Carolina has been wise in its investments in those areas. In the long run, research in science and technology produces even more jobs by plowing new furrows, new ground, new ideas, new industries.

OLD MYTH MUST BE DESTROYED

Now, I want to talk at this point—and I will wear my philosophical hat, for a few minutes instead of my engineering hat since I straddle both fields—and talk about a fundamental myth that afflicts American industry and American universities in their approach to research. By the way, these are my beliefs and while I think Governor Martin concurs with them since we've discussed them extensively, they originate with me, and if you'd like to buy my book to read them, you may. It's my most recent one. The myth to which I'm referring is that which views science as basic research and technology as applied research it is a myth that has to be destroyed as soon as possible.

It originated in the atomic energy program in the 1940s and 1950s in the report that Vannevar Bush made that led to the foundation of the National Science Foundation, he established the idea that science provided the theory and then technology would apply that theory, and indeed, that was true in the area of nuclear power. The ideas of relativity came first. The atomic bomb was the product, and then nuclear power plants were products, radionuclides were medical products, and indeed, it was exactly that kind of transfer from basic science that typically took place.

However, the tradition of technology far exceeds the tradition of science in its length in the origins of the history of mankind. For example--I could go on for my 50 minutes, but you as a professor will understand that I am doing all I can to restrain the airplane. The airplane was developed in North Carolina—flown here, that is. It was developed in Ohio but brought here to fly. We were first in flight, and we're proud of that, but it was developed without the notion of aerodynamics. The automobile was developed without an understanding of thermodynamics, and bridges have been built for centuries without understanding statics. What you have is a tradition of technology that has existed all throughout history and concurrent with that, a tradition of science and they interact with each other.

Science, for example, would not exist today without technology, because it depends upon technology for its instrumentation, and I'll talk in a few moments about the superconducting supercollider and how it is basically a technological project to establish scientific principles.

Now, what does this mean? What are the problems with the myth? One of the problems with the myth that technology is applied science is that we have not addressed our efforts in the right areas. Universities have believed that they would do basic research and then industries would carry out the technology transfer, applied research, and technology. That's not the case at all, and it leads to a great deal of difficulty.

REASON FOR JAPANESE SUCCESS

For example, one of the questions that we ask over and over again about the Japanese is how could they be successful when they have so little effort in basic research in science. The answer is that there is basic research in science and there is basic research in technology, and the two are parallel processes and they decided to do basic research in technology and have been enormously successful.

Let me give you a startling figure that offers another illustration of this problem. In the United States, the total research budget last year for fiscal year 1986 as reported by the American Association for the Advancement of Science was $118 billion. Of that, approximately $59 billion came from industry, $55 billion came from the Federal government, of which $37 billion was in defense. As Senator Sanford has pointed out, there has been a shift from nondefense to defense, and it is alarming, I agree with you, Senator. Universities in the United States received $2.5 billion. Some of that's defense research, but universities do not have the primary amount of money available to do fundamental research in this area. They don't have the instrumentation; hence, what is the answer?

COLLABORATIVE RESEARCH THE ANSWER

One of the answers is a consortium. We have it right here in terms of defense in federal research and development. In any event, universities and industries must come together and have collaborative research, both doing basic research in science and basic research in technology.

From universities you get a more general, longer view, an altruistic view of knowledge for its own sake. From industries, you get a focused product orientation, but with very great sophistication. Universities are not aware that fundamental research has already been done in industries and they can learn from industries. Industries can learn from universities in terms of a broader view and a less product oriented view. But to do this, you have to overcome the notion that universities do basic research and industries only do applied research. In fact, that's not the case at all.

Now, that brings me to specifically MCNC, the Microelectronics Center of North Carolina. It does basic research in technology, and it is a consortia that tries to bridge the gap between the knowledge of universities and the knowledge of industries, which is desperately needed in this country if we are going to meet the competitive challenge of the Japanese.

So I urge that we join together and reorient ourselves to understanding that basic research is done at MCNC. Basic research is done in industries as well as in universities, and the line between science and technology is not as great a chasm as it was believed, for example, in 1945 or 1946, when the Bush report was made.

SUPERCONDUCTING SUPERCOLLIDER

The second point I want to make specifically is that I am in charge of the State's effort to win the superconducting supercollider for North Carolina. This is a cooperative effort, a bipartisan effort involving the legislature of North Carolina and its members have been most supportive. One of my task force members, Senator Kenneth Royall, is here. The Lieutenant Governor is also here. They have been extremely helpful in this effort. However, if we are going to be successful, it is going to mean that we've again got to combine the private sector of industry with the universities and government to produce the leadership in science and the kinds of jobs that North Carolinians will need. It will be a massive effort.

Next week I will announce the appointment of a scientific director who has a Ph.D. in particle physics and also a project manager who has a Ph.D. in nuclear engineering. We also have engaged a contractor. We are moving ahead. We need support from the Congressmen. We need support from the Legislature. We need support from industry.

TRADE THE WAVE OF THE FUTURE

The third and last point, Senator, that I would like to make is the point that my colleague—former colleague in education, now Congressman Price—made, and that is that we are living in an international world and that trade is the wave of the future.

I spent last year in India as a Fulbright professor at the University of Madras. There are more VCRs in India than there are in the United States. Does that startle you? They are all Japanese, 100 percent.

There are 100 million Indians who are middle class who live in the world of microcomputers, jet planes, and VCRs. I was the only person in my building of twelve flats who didn't have a television. I was the only—well, one of a few— who didn't have a VCR. Now, most of them did not have cars, but they will have them. The world's largest market is China. The world's second largest market, presently, is India, and it will be the world's largest market by the year 2000 at the current rate of population expansion. It is not a poor country. There are 400 million or 500 million people who live very much as they lived in the Stone Age in terms of habits, but they are becoming electrified. They are becoming a nation of demands for consumer goods, and that is where the markets are, India and China.

Hence, if we are to be competitive, the orientation of North Carolina has to be one not only that combines fundamental research in technology and fundamental or basic research in science in consortia like MCNC, it also has to have a world outlook, and that means developing new markets and learning languages.

In Madras, daily we would see two groups. One was the Soviets who had a very large military presence in the Bay of Bengal. They were not selling goods. And the others were Japanese. The Japanese were there ubiquitously, even in the tropical heat of 105 degrees and 90 percent humidity on the Bay of Bengal. They would be seen with coats, ties, and suits. And they would be selling very effectively. If they had to learn Tamal in order to sell, they would learn Tamal. By and large, there were many fewer Americans there, and I submit to you that if North Carolina and if the United States is going to be competitive, it's going to' have to be competitive in a world market. We cannot afford to lose areas like electronics to the Japanese, especially given the vast markets that are out there.

The game is not over. I urge you to support the efforts of Mr. Beilman, with whom I have worked and am proud to be a part of this enterprise, and to join with Governor Martin, Lieutenant Governor Jordan, and the rest of the leadership here in furthering economic development through research in science and technology. Thank you, Senator Sanford.

Senator SANFORD. Thank you very much. Thanks to all three of you. While we are shifting seats, I would like to enter into the record, because this will be a record studied and given great attention; first, the statement of Senator Sasser. He outlines, I think very effectively, the basic points here that we need to consider to make us more competitive. Next, I'd like entered a statement by Senator Lawton Chiles, who is Chairman of the Senate Budget Committee and who, in a well thought out statement, points out that economic power is the ability to deliver a rising standard of living on a sustainable basis. And then I'd like entered a statement by John C. Brooks, North Carolina Commissioner of Labor, on the need to establish a national center for applied technology and skills in order to regain our competitive edge.

[The statements referred to follow:]

STATEMENT OF SENATOR JIM SASSER OF TENNESSEE

Mr. Chairman, I appreciate the opportunity to participate in this Budget Committee hearing with you today. Over the years I have admired you greatly and feel that North Carolina will benefit immensely from your service in the U.S. Senate. I, for one, look forward to working with you on many of the crucial issues facing the country today.

This hearing is a good beginning. It could not have been more timely. This week, both the House and Senate Budget Committees began the arduous task of composing a budget for the upcoming fiscal year. The budget, of course, sets out the legislative policies and priorities of the Nation.

COMPREHENSIVE COMPETITIVENESS STRATEGY

At the top of the list of those priorities is a comprehensive strategy for increasing America's competitiveness in the world marketplace.

In my judgment, a successful comprehensive competitiveness strategy must strive to meet two major goals: First, from a macroeconomic perspective, it must seek to significantly reduce the twin deficits, both the budget deficit and the trade deficit; second, from a microeconomic perspective, it must contain policies and programs which make our economy more productive.

It is this second criterion which will be addressed here today. We are all well aware of the severe fiscal restraints the huge budget deficit places upon our ability to provide needed financial resources in areas like education, job training, and basic research and development. These budget deficits place a premium on economizing and prioritizing.

MORE INVESTMENT NEEDED IN EDUCATION

Over the last several months, the Senate Budget Committee has heard from a parade of economists and other experts on how to make America competitive again. And there is one common thread which ties all of their testimony together: That is, that we must increase our efforts in the areas of education and basic research and development.

Last month, I held a series of hearings in my home State of Tennessee to determine the impact of the President's proposed budget reductions in education policy. These cuts included more than $5½ billion, with $4 billion coming out of student financial assistance, and $900 million coming from the elimination of vocational education funding.

I heard testimony from parents, students, and school administrators, and came away with a clear impression that the effects of these proposed cuts would be to deny access to a significant number of individuals simply on the basis of financial capability.

But aside from these impacts, I see no compelling logic in reducing our Federal investment in education at a time when we are striving to regain our competitive edge. Dr. Lester Thurow, the noted economist from MIT, and said "our central problem is the quality of our work force. It just does not measure up when it comes to skills and education."

Now, we may have to change the emphasis or the mix of funding within the education budget, but we cannot afford to cut back on this crucial investment. So this is an area where I believe you will see a great deal of emphasis and support as we put together a budget for fiscal year 1988.

CIVILIAN RESEARCH AND DEVELOPMENT NEEDS INCREASE

Now, another crucial area that we will face will be that of civilian research and development. We are spending, in this country, 1.9 percent of our GNP on civilian research and development, while both West Germany and Japan devote over 2.5 percent of their GNP's to research and development on the civilian side.

Senator Sanford talked, in his opening statement, about how Japan outstrips us in production of engineering students. It seems absolutely incredible to me that a country half the size of ours can produce as many engineers as we do in this country. Dr. Thurow put it most bluntly in his testimony before the Budget Committee when he said "The U.S. needs more students in engineering schools and fewer talented students in law schools." I heartily agree.

It has been noted that technological innovation created thrugh researh has been responsible for nearly half of all productivity gains since World War II. We simply must make American productive again.

There is a disturbing trend that has been occurring since 1981, and that is the increasing concentration of funding for military research and development which is seemingly at the expense of civilian research and development.

Indeed over the past 20 years, while investment in civilian research and development, has remained relatively flat, we have witnessed an explosion, particularly over the last 6 years, in spending on military reseach and development.

Since 1981, while overall Federal research and development funding has grown 74 percent, civilian research and development has only grown some 16 percent, while defense research and development has grown 124 percent.

When inflation is taken into account, since 1981, civilian research and development has declined, in real terms, by 10 percent, while military research and development has doubled, in real terms.

This is a trend which I would like some of the panelists to address in greater detail. It seems to me that there needs to be some greater parity in our basic research spending.

I look forward to hearing from our witnesses here today and I wish to thank the chairman for indulging me in this statement.

STATEMENT OF SENATOR LAWTON CHILES OF FLORIDA AND CHAIRMAN, SENATE BUDGET COMMITTEE

The choices made by the electorate in 1986 are a clear message that the public wants change, and a future they can be part of.

REBUILD ECONOMIC POWER

To that end, our central domestic test is to rebuild and mobilize American economic power.

Our genius, imagination and vitality are well-known to all the world. But for years, those qualities have been on static display. A way has not yet been found to plug them into the new realities of a high-tech world, the modern work place, or the international market place.

We need to galvanize our talents with vision and a sense of purpose to lift our ideas from the drawing board and put them to work. It must be done—not by reaching back for old formulas—but by boldly confronting new opportunities with a fresh sense of resolve.

Economic power is the ability to deliver a rising standard of living on a sustainable basis.

To achieve it, we must be frank about the hurdles in front of us.

We must create, accumulate and project our latent economic vitality at home and on a global basis.

We must reinforce our economic foundations with investments for the long-run rather than settling for short-term consumption.

We must seek improvements across-the-board in our system of education, emphasizing comprehension and creativity as opposed to rote memorization—giving students flexible learning skills for a rapidly changing world. Our students must be exposed to the ways and languages of the world, and understand from the beginning that our prosperity depends on the ability to compete in the global economy.

And we must do it together—business, schools, government and workers—so that the same spirit of adventure that put American astronauts on the Moon's Sea of Tranquility can put American goods on the Sea of Japan.

DEFICIT MUST BE REDUCED

The annual federal deficit—and our annual trade deficit which is nearly as large—must be drastically reduced.

We must put together a package, and set up procedures so that an entire deficit-reduction package goes to the President at the same time. No revenues without spending cuts, no defense without domestic.

To do that, we must take stock of circumstances and deal with them honestly.

Each element of the budget must be subject to adjustment. Neither domestic spending nor military spending can be off limits. And we must be candid about revenues.

As long as we stubbornly resist revenues as a source of deficit reduction, we risk either devastating national defense, or undermining essential domestic programs while slamming the door on necessary investments for the future.

ABILITY TO COMPETE ERODED

The American economy is a spinning top, balanced on a financial high-wire, and supported by money borrowed from our own future and from other nations.

The Democratic Leadership Council has developed a competition index that confronts us with a terrible truth—our ability to compete has eroded. And it reveals something critical about our competitive position. With the value of the dollar declining, our real problem is productivity and the factors which determine it—research and development, savings, and real interest rates.

Wage growth is not the reason we have become less competitive in this decade. Wages have grown less quickly in the United States than abroad. Without this, we would have been even less competitive.

Perhaps the essential lesson of the index is that competitiveness can be achieved in two ways—by making ourselves richer or by making ourselves poorer. Slow wage growth and deliberate dollar depreciation both make us poorer. Dollar depreciation means that our exports buy fewer imports—it is the price a less productive country must pay to maintain its international competitiveness.

We can have high wages and a strong currency, *and* be internationally competitive only if productivity is growing rapidly.

AMERICAN PRODUCTIVITY GROWTH AMONG LOWEST

But we have been preaching one thing, and practicing another. American productivity growth is among the lowest in the world. And there is no mystery about what must be done. We must save and invest more, make certain that we have the best educated and highly-skilled citizens, insure that research is quickly converted into commercial advantage, manage smarter and better, and recognize that our prosperity rests on partnership and cooperation.

But today we are ill-prepared to do these things. We are burdened by high real interest rates, a low and dropping rate of savings, and a puny investment effort for industrial research and development.

In 1985, foreign imports were 41 percent higher than they were 5 years before.

Five years ago, we had a $26 billion surplus in foreign sales of high-tech equipment. This year, it will become a deficit.

For the first time in a quarter of a century, we have begun posting agricultural trade deficits.

Japan—a nation half our size—graduates as many engineers as we do. Germany, with one-fourth our population, exports more goods and services than the United States.

Nineteen achievement tests were recently given to students in different countries. Students from the United States *never* ranked first or second. Relative to our developed trading partners, we were at the *bottom* 7 out of 19 times.

As a nation, we have seen these problems emerge. But as a nation, we have not joined hands to solve them. Business, industry, government and workers each pursue separate paths, weakened by the absence of a coordinated program for growth, trade and the reaffirmation of economic power.

We have been good at many things in this country. But there is nothing we have been better at in the past than competing. Today, however, we are restless at the atrophy of our competitive ability.

While we were at the top of the competition pyramid, we were blind-sided by a host of other nations with the zeal for advancement. They saw how we did things. And they started doing these things for themselves.

We were surprised and annoyed when other nations started testing our talents with quality auto imports. And we were surprised again when everything from footware to fiber optics started pouring into the United States from abroad.

We have not responded to the challenge. Instead of gearing up our ingenuity, we have allowed our economic power to decline.

Our history shows the United States responds well to crisis. Faced with threats to our freedom, we have mobilized for war. Confronted with the challenge of the stars, we built a tremendous space program. But when times are good, we have a tendency to rest on our laurels. We have been in economic repose while other nations have been on the move. Those two facts have combined to create a crisis of competitive decline in the United States.

Belatedly, we have come to understand the world has changed. It no longer steps aside at the sight of our shadow. The world keeps moving ahead, putting goods on the market and telling us: "If you think you can do better, go ahead and try."

We have not been trying hard enough.

Now is the time to try something new. The Democratic Party is best equipped to move when times demand action. In the tradition of Wilson faced with war, in the tradition of Roosevelt faced with the Depression, like Truman and Kennedy facing foreign threats and economic dilemma, we are the part of change determined to meet the challenge.

For years now, we have been told that if we take government out of the economy, business will step in. But facts prove that notion false. Our economy has grown somewhat over the past few years, but it has been expansion at the waist where the small companies are gobbled by the large, and the large are digested by the giants. We have rearranged rather than rebuilt our capital, damaged rather than improved our productivity.

PURSUE ECONOMIC POWER IN SIX AREAS

We must move, now, to take hold of our future by asserting economic power, and there are six areas we must pursue. We make no claim that each step separately will solve our problems. But it is time to be bold.

First, is education and training. Beginning in the early grades, we must familiarize our children with the value of math, science and computers. We must open their minds to the ways, beliefs and languages of our competitors.

No skill can be overlooked. Vocational training in our secondary and post-secondary schools, intensive research and applied learning in our colleges, on-the-job training for our workers, and retraining for workers with new interests. In each of these broad areas—and in countless lines of work—America must believe again that we are the best, and then go ahead and perform up to the level of our expectations.

All students—gifted, average, disadvantaged—must have appropriate education to work in the high-tech world of tomorrow.

We must be guided by a principle at the core of our party's rich tradition. Democrats are not now, nor have they ever been, the party of the "little guy." We are the party that believes there are no "little" guys.

We believe in this country as a nation of individuals where everyone has the chance to advance. It is that spirit of moving up and ahead that makes this nation great. We believe restoring economic power is not a part-time assignment for a portion of our people. So we hang out this sign to the American worker: "Help Wanted. Everyone need apply themselves."

Second, we must forge a new alliance among industry, university, and government researchers. Economic power cannot be built if our best ideas are taken to the market place by others.

Government can encourage these cooperative research efforts and be the catalyst which insures that scientific breakthroughs flow directly to our businesses.

Now, before the damage becomes irreversible, we must launch a national effort in manufacturing techology—as great as the space program—to guarantee that American firms become and remain the most efficient producers in the world. Without this effort, we will continue to lose not only production jobs, but the design, engineering, and high-paying service jobs which rely on the lifeblood of production.

Americans have never shunned hard work. But neither have they ever been reluctant to demand fair treatment, a chance at advancement, and a stake in the work they do. Those are not only reasonable goals; they are the strength of our work force. And we must make sure our workers can stretch their productive talents to the maximum.

We must launch new regional centers of manufacturing techology. We can revitalize and fund adequately the National Science Foundation's efforts in these areas.

Our aim is to take down the walls between the laboratory and the marketplace, and change those laboratories into arteries that pump ideas into the economy for practical application in the shortest possible time.

Third, we must expand our fund of action capital by re-establishing the incentive to save rather than forever focusing on higher levels of consumption.

We must insure that our commercial enterprises are backed up by long-term capital seeking payoffs built on market presence rather than short-term gains that can't endure.

To do this, we will have to reexamine our financial system. We must look at options for banks and non-financial enterprises to be equity partners in major foreign ventures. We need to alter the Glass-Steagall Act so that commercial banks can participate in investment banking. And we must insure that the ongoing deregulation of our financial system allows our banks and other financial enterprises to compete on equal footing—all the while preserving the soundness of the system.

We need to step back and take a hard look at the way we raise revenue—and alter the many subsidies to consumption. We need to explore indexing capital gains and interest expense against inflation.

And we must reduce the rewards to the speculators by removing the tax incentives to unproductive mergers and acquisitions—that rearrange assets without building our economic power. Only by reversing the perverse financial incentives and rewards that guide the career paths of our best and brightest, can we hope to channel our energies into productive power.

Fourth, because the deficit stymies all our attempts at sensible investment, we must view its reduction as an integral feature of the effort to reassert economic power.

We must not take the short view. No more gimmicks. We have a law on the books—Gramm/Rudman/Hollings—that says we must erase the deficit in 5 years.

So we must be bold enough to ask about the sources of the deficit—a long job ride of domestic spending, a massive rebuilding of our military, and a political insistence that revenues are too hot to touch.

And we must be bold enough to assert that the same things that created the deficit are the same things we must use to wipe the deficit away. Since our commitment to a new era of economic power asks the best performance of our people, we must ask no less of those who hold public office.

To that end, we must reaffirm the true meaning of the Gramm/Rudman/Hollings law and focus—not just on 1-year savings—but on ultimate deficit elimination in the 5-year time frame.

To reach the first year targets, we fell back on band-aid solutions like asset sales. They gain us nothing in the long run. They do nothing to alter the basic structure of the budget—to reshape it so that it will accommodate genuine needs rather than being satisfied with ephemeral savings.

We must refine the budget reconciliation process so that any additional revenues are earmarked solely for deficit reduction. Spending reductions and revenue increases must be enacted at the same time. And outyear limits for overall spending must be established so that we will know for sure where we are going, and what must be done to get there.

Finally, we must rinse out the politics of expedient economic assumptions so that the numbers tell us frankly the size of the job, and people who have sacrificed before will not be left in the twilight zone of unexpected reductions piled on earlier surprises.

Fifth, the people who make this country work are the workers themselves. And they should have the same right to share the risk and the reward of their effort. So it is time we streamline the workplace to make it more efficient and productive, and reward people for their sweat and their ideas.

People want to share in the profits of the organization for which they work. They want to know they have access to the good jobs and a role in management decisions. So wherever the possibilities arise, we should reward innovation and make loyalty an outgrowth of the workers' belief in their work rather than a shadow over their futures.

When workers and management are rewarded on the basis of performance—effort, teamwork, quality, and practical innovation are all enhanced. As important, profit-sharing can reduce the "fixed cost" element of labor's compensation, creating the incentive for firms to hire more workers in good times and lay off fewer in bad—creating a larger economic pie for all of us.

The American workers have been willing to invest in the health of the companies they work for. In times of economic hardship, they gave back wage increases, and withheld requests for fringe benefits. Workers have been sensible about their futures, and we can demonstrate our respect for their sacrifice by making job training and retraining a vigorous feature of a growing economy.

Yet, a recent study by the Congressional Joint Economic Committee shows that while we have created American jobs in this decade, they have been low-paying. The number of high-paying jobs has actually declined. That is more than just a disservice to our workers. It is a tether on our hopes for national economic growth.

Sixth, the United States must take practical steps towards a vigorous system of open and fair world trade.

We must not be shy about insisting on the removal of foreign barriers to the sale of our goods abroad. Neither should we be shy about facing up to the fact that some of our problems are self-inflicted.

The administration has rejected the findings of the International Trade Commission that copper and footware have been damaged by foreign trade practices. It did nothing to help our machine tool industry until it was too late.

We have not monitored predatory practices of our competitors, nor have we systematized our approach to making our own laws foster our trade prospects.

One of our most nagging problems in the arena of trade is political. Every time someone counsels getting this country in shape to compete, someone else is sure to call it, "protectionism." That's nonsense.

In this country, we believe in equal opportunity. We expect no less in the world marketplace. There is a vast difference between competition and protection.

Protection is negative, passive, a fortress mentality. Competition demands agility, imagination and activism. We must demand competition, promote exports, and make the most of our opportunities.

And so we come full circle back to the core of economic power. Competition.

THE POWER OF DEMOCRATIC CAPITALISM

The Democratic Leadership Council itself is an innovator in the quest for rebuilding America's economic power. The DLC's concept of "democratic capitalism" suggests a new American compact in which all of us share in the adventure of competition.

Democratic capitalism aims at achieving three economic goals: higher employment and job security, a greater stake for workers in their jobs, and an intensive effort to improve our productivity.

Democratic capitalism is the opposite of government "micromanagement". It offers a vision of cooperation based on market solutions, with the idea of making the private and public sectors work better together. These notions go hand-in-glove with the idea of economic power.

These are vigorous initiatives, and the size of the goals themselves may be a source of concern to some.

Years ago, the longshoreman philosopher, Eric Hoffer, wrote a book called, *The Ordeal of Change*. And in it, he noted that it, "has often been said that power corrupts. But it is equally important to realize that weakness, too, corrupts." He went on to point out that weakness damages everyone.

Those of us on the Democratic Leadership Council are dedicated to stopping the drift and helping this nation regain the mastery of our future.

FALSE PROMISE OF PROTECTIONISM CAN BE AVOIDED

If we are bold enough to restore our economic power we can avoid the false promise of protectionism. We can avoid the reflex that says "no" to every social need, but also be sensible enough to retire the programs that have not served us well.

We are so apt to speak of "crossroads" in American history that we sometimes misread the signs in front of us.

To the credit of our historic predecessors, they were able to read those signs at other crossroad periods.

They saw the need to unite our coasts with railroads in the 1850's, and bind us still closer together with a network of highways in the 1950's.

They read the signs left from the Depression of the 1930's, and created systems ranging from Social Security to the Reconstruction Finance Corporation to assure our strength against further threats.

Our leap into the high-tech era was made possible by the investments we made in the 1960's. Across the full spectrum of national life—from electronics, to medicine, to agriculture, to manufacturing—we created foundations for growth even while the directions of that growth were still hidden from our eyes. But our predecessors were ready to move when the time came, and we must be ready as well.

The crossroads we face now is fundamental to our future. It is a choice between relying on our reputation to carry us through, or using our economic power to push us ahead. Thus, it is not our intent to be politically critical for the sake of partisan advantage, but to be inventive for the sake of national advancement.

Through economic power the United States can win in the world economy—and thereby forsake protectionism. It will make us more open to change since we will have a greater ability to determine how change will affect our future. Economic power will allow America to reassert global leadership in an economic order based on cooperation and free exchange.

We must make choices. We must act now. Economic power is an asset developed from the will power and talent of our people. We, therefore, owe it to ourselves to be tough enough and sensible enough to lead by example and succeed.

STATEMENT OF HON. JOHN C. BROCK, COMMISSIONER, DEPARTMENT OF LABOR, STATE OF NORTH CAROLINA

The United States is rapidly confronting the problems resulting from the influence of new technology upon the jobs currently available to its labor force. It can either seek to replace the disappearing jobs with unskilled and service industry jobs or it can make a significant effort to develop many new high-skill job, it must quickly initiate a capacity to provide technological training and employee retraining far beyond the capacity currently possessed by the Nation's public and private educational programs. To succeed, I believe that a specific focus and a comprehensive plan of attack is required during the next few months.

There are some 24,000 occupations which are defined by the U.S. Department of Labor and which are pursued in our society. Of these, 800 are considered to be high-skill, non-professional. These are the skills whose masters are termed "journeymen." The predominant current existing educational mechanism in the United States for training persons in these 800 crafts is through formal apprenticeship training provided by private employers through on-the-job training. Most of the training provided through this mechanism is neither duplicated nor complemented through any institutional curricula or related training. The training for most of these crafts is now of 4 to 5 years duration.

A formal system for apprenticeship training was institutionalized by the enactment of the Fitzgerald Act by the U.S. Congress in 1937. As a part of that endeavor, the U.S. Office of Education and the U.S. Department of Labor submitted to the Congress a joint memorandum setting forth their mutual views not only on the administrative role of the Department of Labor, but also on the responsibilities of the Office of Education to service apprenticeship programs with regard to the apprentice "as a student—the related technical and supplemental instruction needed to make him a proficient worker and the supervision and coordination of this instruction with his job experience." *A copy of this agreement is attached.* While this agreement continues in effect to this day, not the first finger has yet been moved by anyone in the U.S. Office of Education or its successor organization to effect the stated obligation.

When one reviews the spectrum of educational institutions provided by the Nation's public and private sectors, one finds a gap in the educational structures with regard to the existence of very many institutions charged with generating and offering curricula in these particular skills.

The apprenticable occupations are characterized by both a high level of understanding of theory and mathematics, and the development of proficiency in manual manipulation. A list of these apprenticeable occupations is attached.

Set forth below is a proposal for the establishment of a National Center for Applied Technology and Skills.

MEETING THE NEED FOR QUALITY FACULTY

The kind of National Center for Applied Technology and Skills which is needed requires a highly skilled faculty capable of conducting research, designing curricula, developing and validating tests, and capable of teaching graduate students. To have an effective institution requires a "critical mass" of competent faculty members. It is not enough, even if it were possible, to have a single competent faculty person at a random college, university, or vocational school who might undertake to design curricula and tests and conduct research in a given apprenticeable occupation. Such a faculty member would not normally be attracted by the professional status and professional support system furnished under such conditions. The establishment of a National Center for Applied Technology and Skills would offer faculty members the required professional status and support system needed to attract the quality of faculty members such an institution would need to have to be successful.

The faculty salary schedule established for this kind of facility could take into consideration both the added responsibilities and higher mission of the facility and thus accommodate the need to have competitive salaries sufficient to attract the needed faculty. This would mean that the faculty salary schedule would be considerably higher than that which is presently available in most vocational schools.

An additional mission of this facility would be to train the faculty which our nation's vocational schools need in order to provide as much of the curricula for teaching applied technology and skills as might be usefully and appropriately distributed to and implanted in the various vocational schools around the country. Such a facility or institution might also design and administer a certification system for such teachers.

MEETING THE NEED FOR CURRICULA

There are currently few institutions in the United States where curricula for courses in applied technologies and skills can be developed and updated. And of more importance, very little of this kind of activity is now going on with respect to apprenticeable occupations. The level of expertise and ability which this requirement demands will have to be expanded if the job is to be done. One of the benefits of establishing a National Center for Applied Technology and Skills is the assemblage of a faculty capable of developing the curricula which are needed in the United States for training persons with the marketable skills demanded in the work place. The curricula which are designed at this center may be disbursed for use in the high schools for use at the junior and senior levels, in the vocational schools, and in public and private institutions of higher education; as well as at the center itself.

MEETING THE NEED FOR WELL-EQUIPPED LABORATORIES

The 4 to 5 years of training which is normally required to produce journeymen-level craftworkers necessitates the students developing manual proficiency through hands-on experience with the tools and resources of their trade. This requirement can be met in one of two ways on a practical basis: (1) through the utilization of the equipment and resources of private industries in the normal production of the products of business, and (2) through the provision of facsimile facilities in laboratories of an educational institution. While the first alternative is most economical and in many instances will be the only practical approach due to the exorbitant expenses of the type of equipment and resources required to develop manual proficiency, the provision of laboratory facsimile training facilities will be desirable in many situations to accommodate large numbers of students, to facilitate research, and to provide training opportunities where a complete training facility is not otherwise available. The kinds of laboratories that the teaching of applied technology and skills requires are very, very expensive to establish. It can cost in thousands to millions of dollars to equip a single laboratory for the teaching of a single craft. It is not reasonable to contemplate that sufficient State-supported educational institution will have the resources from either the State or local sources sufficient to equip adequate laboratories for the teaching of very many high technology and skill curricula. Currently, only a few facilities offer well-equipped laboratory facilities for the teaching of more than a dozen crafts.

While the Nation as a whole may need 50–1,000 high-skill craftpersons a year trained in a given craft, the need, when distributed throughout the several States, often does not justify the establishment of a well-equipped laboratory at a single State-supported institution. The assemblage of a sufficient number of students to make the offering of a curriculum and the provision of a well-equipped laboratory efficient and economical suggests that in many instances a national residential institution is necessary in order that the students wishing to pursue the training can assemble in a central location where a well-equipped laboratory can be provided.

MEETING THE NEED FOR TEST DEVELOPMENT AND VALIDATION

The teaching of applied technologies and skills requires the ability to certify the students' achievements and proficiencies upon completion of individual modules of training. There is currently unavailable adequate tests for determining this certification. One of the roles of this particular center would be the development of tests and their validation.

MEETING THE NEEDS OF STUDENTS

In many instances this National Center for Applied Technology and Skills would offer curricula which is otherwise unavailable in many parts of the United States. An example of such a curriculum would be one to train elevator mechanics.

In cases where a curriculum has been implanted into 2-year vocational schools, students pursuing the third and fourth year level of the program could transfer to the center where this advanced levels of training are available and where a faculty is assembled capable of teaching these levels of the curriculum. A faculty capable of teaching these advanced levels of such curricula can not be found in many States today.

This center would also be a facility for training new faculty members both for the center and other institutions which might teach components of the curricula which the center generates. It also would have the capability of guiding the work of graduate students in vocational education.

MEETING THE NEEDS OF THE EXISTING WORK FORCE

Many of the persons who are in need of training opportunities in the United States are already members of the work force and are already employed. One of the functions of the center, and a very important one, would be the designing of training programs which can be implanted in existing businesses for the utilization of workers who are on the job. These programs would permit workers to retrain for the new technologies which are introduced in the industries in which they are already working.

MEETING THE NEED FOR RELATED-INSTRUCTION MATERIAL

While there is some high quality related-instruction material already in existence for some of the 800 high-skill occupations, most of this material has been produced by proprietary interests which either restrict access to the use of the material or sell its usage per student at an unreasonably high price. There needs to be at least one facility in the Nation with the audio-visual production capacity and resources to produce related-instruction materials which can be packaged and distributed to the high schools, vocational schools, and colleges for use in the classroom as well as for use in learning labs wherever they may exist. This function of a center of this kind could be the one which has the greatest impact upon opening opportunities for training in many occupations to women, blacks, and others to whom opportunity is now denied. The equipping of an adequate production center for related-instruction materials would require both expensive equipment and high-priced editors and production personnel who can only be efficiently located in a single facility in the Nation at the present time. Adequate related-instruction materials are generally unavailable in most States today. The lack of a capacity for production of this kind of material is impeding the provision of more curricula in the apprenticeable occupations today.

MEETING THE NEED FOR RESEARCH

There is a tremendous need in all of America for the conduct of significant research in the teaching of vocational education. The conduct of creditable research requires a good faculty, well-equipped laboratories, a good library, grants, and a supply of research fellows. The conduct of research is a very rare contemplated activity in identified vocational schools around the country. Research with regard to the teaching of applied technologies and skills in apprenticeable occupations is not currently being conducted to any significant degree in the Nation's colleges and universities. The kind of center that is contemplated in this proposal would support the conduct of significant research in these areas of vocational education. A faculty of substance could be assembled that is of sufficient size to support the worthwhile activities of research fellows who might be attracted to this facility.

MEETING THE NEED FOR LIBRARY SUPPORT

A specialized library of materials is necsesary if the kind of curricula development and research set forth above is to be conducted. There are currently few assemblages of materials anywhere in the United States adequate for this need. The best library of this kind of material of which the writer is aware is a 60,000-volume collection at Ohio State University. While that particular collection is available for use at the location in which it is situated, it is not a lending library. The second best libraries of this kind of material may be at the University of Texas and Bowling Green State University.

Few States have adequate resources, or are likely ever to commit adequate resources to the assemblage of a library sufficient to support curricula development and research in the apprenticeable occupations. If the Nation is serious about providing training opportunities in these crafts, a library will have to be assembled to accommodate this need.

MEETING THE NEED FOR PUBLICATIONS

A professional cadre of teachers and training directors in the several States' high schools, colleges, vocational schools, and private industry in the fields represented by the apprenticeable occupations needs the support and information which can be provided through publications and journals addressing their particular fields and interests. Such publications and opportunities for publication are very limited in the United States. Most persons in these areas of vocational education are without the supply of information and support which is needed to keep them abreast of new developments and which are needed to develop a high level of professional competence in these fields. It would be practical to establish a location for the generation of such a publication or journal at the proposed National Center for Applied Technology and Skills.

MEETING THE NEED FOR ESTABLISHING EMPLOYMENT POLICY PLANNING

While efforts, such as one currently underway through a North Carolina labor market information task force, are being made in several States to develop a mechanism for collecting and forecasting labor market information, results thus far reflect the unlikelihood that any significant inroads will be made upon collecting an adequate amount of labor market information sufficient to be the basis for any useful forecasting activity in the near future. Ultimately, the development of labor market information and forecasting on a useful basis toward the end of developing a reasonable national employment policy and planning the effective use of the Nation's resources for training the work force in needed occupations will have to evolve upon an assemblage of persons who are not currently to be found on government payrolls. This function may very well be one that can more logically be performed by the assemblage of persons contemplated through the establishment of the proposed National Center for Applied Technology and Skills. This function would complement the research which this kind of center would be conducting anyway.

MEETING THE NEED FOR A BROKERAGE AGENCY

There is a role that needs to be played by some institution in the United States that is not currently being played by anyone. This role is a combination of being a catalyst and a broker in working out cooperative arrangements between government, public and private educational institutions, and private businesses in the provision of vocational education training opportunities. Vocational training curricula need to be designed which are then implanted, in some instances in high schools, in some instances in vocational schools, in some instances in private colleges, in some instances in universities, and in many instances in individual businesses. Additional complementing components or modules of a given curriculum which interface with those which are implanted in these situations need then to be provided in other institutions. The distribution of these programs in geographical areas of the Nation is yet another dimension of the brokerage activity which should reflect the determinations of labor market forecasting and student/employee training needs and requirements. There needs to be a central facility with the ability to comprehend the entire provision of occupational education opportunity in the Nation. The proposed National Center for Applied Technology and Skills could accommodate this need.

VOID WOULD BE FILLED

The establishment of the proposed National Center for Applied Technology and Skills would assemble the resources necessary for effectively and efficiently providing the much needed services in support of the provision of adequate vocational education in the United States. The establishment of this center would fill a very significant void in the educational structure of the Nation. This center would have the resources and the "critical mass" necessary to be successful. This center would not be in competition with current institutions but would complement existing institutions in very important needed ways and would, in fact, strengthen the Nation's economy significantly.

Senator SANFORD. We will now hear from the Lieutenant Governor of North Carolina, Bob Jordan. I've already noted the leadership that he has brought and the concern that he has for the economic health of this State, so we are delighted to have you with us. We welcome your remarks.

STATEMENT OF HON. ROBERT B. JORDAN III, LIEUTENANT GOVERNOR OF NORTH CAROLINA

Lieutenant Governor JORDAN. Thank you, Senatore Sanford.

We are pleased to have you in North Carolina for this hearing.

We appreciate your efforts to find out what is happening in the States as you make your difficult decisions about the Federal budget. We are very aware of the difficulties you face in trying to balance the federal budget and we offer you our support and cooperation.

DON'T LEAVE LEGACY OF DEBT AND LOST OPPORTUNITY

As the previous testimony before this Senate Committee by Lester Thurow, Pat Choate and Robert Holland indicated, our future depends on the United States maintaining a strong competitive position in the world economy. It is essential that the federal government develop fair trade policies, reduce the federal deficit, and balance the budget. The next generation deserves a future of progress and economic advancement rather than one of debt and lost opportunity.

As Senator Sanford knows, North Carolina has a proud tradition of progressive government, with a clear vision of our future and a strategy for realizing our dreams. Throughout our history our vision and our strategy have intertwined education and economic development and made them inseparable. We believe education is not only the key to individual advancement, but also the cornerstone of our economy.

TERM "HIGH TECH" NOT NEW TO TRIANGLE PARK

Luther Hodges and Terry Sanford had the vision to stake out the Research Triangle Park as an example of a partnership of educational excellence and economic opportunity before anyone ever coined the term "high tech". Others following in their footsteps worked to keep building, keep striving, until the Research Triangle Park—our North Carolina partnership between economic development and education—is not merely known throughout the South or the nation, but around the world. Our academic institutions are continuing to seek breakthroughs in microelectronics and biotechnology and to strengthen our traditional bases in agriculture and textiles.

We have excellent universities and colleges, public and private, and an extensive community college system. We are proud of our public schools. But we also realize that we must constantly seek to improve and redirect our education system if today's graduates are to be prepared for today's jobs and tomorrow's students are to be prepared for the future.

We are committed to prosperity for all North Carolinians. Our basic industries—tobacco, furniture and textiles—are in a state of change. Between 1978 and 1984, 31,075 people lost their jobs in the textile industry. We are losing 3,000 to 4,000 farms each year. Our state is heavily dependent on manufacturing—31 percent compared to the national average of 19 percent. We cannot afford to stay with the status quo and ignore the economic changes taking place in our nation.

EDUCATION DRIVES ENGINES OF PROSPERITY

The minds of our young people are the great resource upon which our future is based. Our educational facilities are the engines that drive our future prosperity. And basic literacy, knowledge, technology and maybe even wisdom will be North Carolina's most important export in the years to come.

Numerous studies have emphasized the link between education and economic growth. "A Nation at Risk" was the first in a series of widely publicized reports on national educational challenges and opportunities. The recent report "Halfway Home a Long Way to Go" by the Southern Growth Policies Board, and the findings of our own North Carolina Commission on Jobs and Economic Growth[1] all deliver the same message: "unless we all move forward, nobody's going very far; unless we all work for the common good, there won't be any." We are indeed only as strong as the sum of the total parts.

We realize we must make investments today if we are to reap rewards tomorrow. In North Carolina, we are implementing a Basic Education Program aimed at providing equal educational opportunities for every child in this state. The cost is high—an additional $800 million dollar investment in our public schools. And we are taking on this initiative at the same time that we are improving teacher salaries, strengthening teacher education programs, piloting career ladder and lead teacher programs to provide new opportunites for teachers, and increasing funds for new science and math equipment.

We are also upgrading our community college system. Tomorrow's work force cannot be trained with yesterday's equipment. Community colleges are working closely with industry leaders to identify skill demands and job opportunities so that our people will be prepared for the constantly changing job market. This system is serving the lead role in providing literacy training to those adults who lack basic education skills.

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[1] See p. 44.

A strong university system is the key to encouraging technological innovation—the utilization of basic research for the public good and for new economic opportunities. The Research Triangle Park is just one example of the public/private partnership that is important to economic competitiveness. You will hear in a few moments about the Microelectronics Center. We have a Biotechnology Center aimed at keeping our universities and our industries on the cutting edge of new products. We are starting a Rural Economic Development Corporation that will provide new opportunities for our communities that are losing their share of the economic pie.

At N.C. State University we are starting what will be known as the Centennial Campus—a whole new concept in public/private research and innovation. Two proposals by NC State for National Science Foundation grants: 1) an Engineering Research Center for Research In Apparel-Fiber-Textile industries and 2) a Center for Advanced Electronic Materials Process with Duke University and the Microelectronics Center will keep us on the forefront of changing technology.

This is the commitment we are making to research and technology transfer to keep us competitive. Our efforts become ever more difficult though because of federal cuts in civilian research programs. Our nation lags behind many others in this area critical to our nation's future.

FEDS NOT MAKING COMMITMENT FOR THE FUTURE

In North Carolina, we're willing to invest in a strong infrastructure system, in tax incentives and venture capital funds to attract new business and enourage investments in small business.

Other states are willing to take the same risks and make the same commitments to build a strong future. But frankly we don't see the same action coming from the federal government. We at the state level have been willing to take a chance on our people. We have made the tough decisions to balance our budget. We have set priorities for keeping a competitive economy. And we find it hard to understand how in the last six years, the leader of the world economy has become the largest debtor nation in the world.

Former Treasury Secretary William Simon has stated that the national debt is approximately $6,400 for every man, women and child in America. If those figures are accurate, the cost for the people of North Carolina is $40 billion dollars. That equals our State budget for the next four years. We simply cannot afford that debt.

THE NATIONAL DEBT

For the past six years, we—the states—have had to "go it alone" when it comes to progress in education and the economy. The only certainty over the past six years has been decreasing support for the investments that must be made if we are to restore our industrial competitiveness and work for a bright future. The only certainty has been continued and relentless cutbacks in federal support for education and training, health care, environmental protection, social services and transportation—all of which are of great concern to North Carolinians.

We are willing to help you balance the budget. But as you make the tough decisions, please think about the priorties that this nation needs to set to build a strong future. As a businessman, I know that I have to make some investments that will not bring immediate returns, but in the long, will make my company more competitive in the future. As a state leader, I recognize that some of the investments we make right now will not pay off until the 21st century. But my efforts in business and state government will mean little, if the federal government is not willing to take the same risks and make the same investments that I and the people of this nation are willing to take.

Congress has approved money for clean water and sewer services. That will provide $43.8 million dollars to help our cities and counties with their infrastructure systems. We strongly urge you to free up federal highway funds that will enable us to implement our 10 year plan for construction and maintenance of our road system.

My message to you today is simple. Whenever you look at cuts in education or infrastructure development in Washington, know that it means cuts in opportunity down here. And every time you are tempted to short change education "just a little", remember every dollar you invest in it today will be reaped four fold in economic development and of course a thousand fold in human development.

The prophets said, "Where there is no vision, the people will perish." Don't let the lack of vision by those who only want to cut dollars cause education of economic development to perish here in North Carolina and in every other state in this nation. We've come too far, we risked too much, and we've gained too much to turn back now.

Once again, I thank this committee for coming to our state and hearing from North Carolina. You are both men of courage, capable of making tough decisions. I urge you to continue your fight for investments in our future. Thank you very much.

Senator **Sanford**. Thank you very much. I would like now to ask two leaders of North Carolina to come forward. The Burlington Industries was organized in this State some years ago by one of our most creative constructive citizens, Spencer Love, and that tradition has carried on through that industry all of these years. The Vice Chairman of Burlington Industries certainly is a person of that same kind of vision and spirit, Donald Hughes, and I am so pleased to have Mr. Hughes here.

The host for this occasion, Donald Beilman is someone to whom we are very grateful not only for making available this wonderful facility and for doing all of the things necessary to make our visit here comfortable and pleasant, but also for adding his vision and his experience to our consideration of how we move more briskly into the future in terms of competitiveness. Gentlemen, I thank both of you for being here.

I think we will start with Mr. Hughes.

Mr. **Hughes**. Thank you, Senator.

STATEMENT OF DONALD HUGHES, VICE CHAIRMAN, BURLINGTON INDUSTRIES

I appreciate your inviting me to discuss issues related to the competitiveness of the U.S. textile industry. I wish you well and hope that your work leads to some solutions to a very thorny set of problems.

If competitiveness is considered in textbook terms, it has two meanings. The first has to do with the degree of economic competition that exists in a particular market or industry, and its criteria are such measures as the numbers of firms, the profit margins on sales, return on investment or assets and the ease of entry into the field. The second meaning pertains to how successful a particular firm or industry is in comparison with its competition. Here the criteria are productivity, the efficiency of use of resources, the degree of modernity of production facilities, the value associated with the product, marketing strategies and customer service.

Today, there is another meaning of competitiveness—the one that has brought us together here. Competitiveness—or American industry's perceived lack of it—has become a shorthand explanation for the unsupportable trade deficit that is plaguing our nation.

Let me address the competitiveness issue as it applies to the textile industry in this country.

There are more than 5,000 textile manufacturing enterprises in the United States. Modern textile production is fairly capital-intensive, but that is not an insurmountable barrier to entry, as can be seen in the great amount of activity—start-ups, mergers, acquisitions—that go on all the time. Over the past 15 years, the American textile industry has become the most modern and productive in the world.

The industry also has a well-deserved reputation as the leader in the development of new products, from yarns to blends to fabric constructions. Unfortunately, the industry does not derive the full benefit of its innovative leadership, because overseas producers are quick to copy—or "knock off"—good products designed here. Those knock-offs often find their way back to the United States in the form of imported clothing.

The industry is currently engaged in a major campaign to demonstrate to its customers that it can deliver the goods more dependably and more quickly than can overseas sources. A few years ago, a study show that the total time required to put apparel in the hands of the consumer, taking into account the production of the fiber, the fabric and the garment, along with all the inventory and in-process time involved, was 66 weeks. We believe the process can be completed in five or six weeks, and all parties involved in the chain are working toward that goal. This campaign is called, appropriately, "quick response."

UNFAIR COMPETITION THE PROBLEM

But despite the best efforts of this industry and the fact that it *is* modern and productive, the two million workers employed in manufacturing textiles and apparel are finding that their jobs are being taken away by imports from low-wage countries.

This import problem is at the root of the competitiveness issue. It is a serious problem. Imports have been growing at the annual rate of 19%, and there is no end in sight. But I want to let you know that the domestic industry is not just sitting idly by and crying for assistance from Washington. Let me tell you about some of the things going on at Burlington to enhance competitiveness. Similar programs are under way at many other companies, I am sure.

HISTORY OF COMPETITIVENESS AT BURLINGTON

Competitiveness has been a way of life for Burlington Industries for a long time.

In the past ten years, we have invested $200 million a year in modernization—a total of over $2 billion. In recent years, we have invested 150% of our cash flow from operations back onto the business.

We have modernized nearly all our facilities. Our new plants with their materials-handling robotics and other new features attract visitors from all over the world. Our plants are clean, desirable and healthy places in which to work.

Let me cite one very important illustration of our modernization program. The most vital machine in making fabric is the loom or weaving machine. The standard most widely used in judging the degree of weaving modernization in a textile plant is the extent of use of shuttleless weaving equipment. Over 95% of Burlington's weaving equipment is represented by these state-of-the-art machines. Many of our U.S. competitors also have a high concentration of such equipment. In constrast, most textile operations in other nations have only a small fraction of Burlington's modern weaving equipment.

Our dying and finishing technology is in most respects "state-of-the-art." In fact, in this area we have been responsible for significant technological advances that have subsequently spread throughout the industry.

Going beyond capital expenditures, there are other activities that can have a significant effect on competitiveness. Burlington strives to innovate through an aggressive research and development effort. In 1986, we spent $28 million in this area to develop new products and processes. In addition, several times this amount was spent by our divisions to enhance existing products and processes.

Often, we have patented innovations developed by us and contracted for their manufacture, and these products and processes have then been made available to others in our industry through licensing. Burlington has received well over a hundred patents in the past five years.

Burlington has also spent considerable sums to improve service to our customers by reducing lead times and providing quicker responses to their needs.

Finally, Burlington annually spends very large sums of money in training to develop the skills of its employees to help them realize their full potential and thereby make our operation more competitive.

What have been the result of all this effort and expenditure? Let me cite a few key facts.

Burlington's productivity has improved between 4 and 5% per annum, compared with less than 2% for U.S. industry as a whole. I believe the textile industry has also averaged close to 4%.

Many products that originally were Burlington innovations have become standard items on the America scene: tufted carpet, nylon typewriter ribbon, woven fiberglass products such as drapes and electrical insulation, ready-made draperies, silk-like polyester blouse fabrics, polyester/cotton blended fabrics and the polyester/worsted blended fabrics that have helped to make American men's and women's tailored clothing the quality standard in its field.

Burlington has also achieved considerable improvement in its delivery and service to its customers.

That's a thumbnail sketch of what one American company has been doing to improve its competitiveness. Now let me turn to a subject that has been consuming a great deal of time and energy for many of us in the textile and apparel industry—the need for a more active role of government.

GOVERNMENT'S ROLE

By far the most effective action the government could take would be in the area of trade policy.

The starting point must be a realization of the importance of the textile and apparel industry to this country's economy and security. If you don't accept that, you won't go any farther. Others can make the case for the industry's importance much more eloquently than I can, but I would simply ask you to take a moment to contemplate a United States dependent on imports for the bulk of its apparel, with domestic sources reduced to cottage industries. If that scenario makes you uncomfortable, as it does me, for whatever reason—national defense considerations, pride, whatever—then you must agree that something needs to be done, because that is the direction in which we are inexorably heading.

You know, there is another aspect of that scenario that bothers me. First, you must recognize that the textile and apparel complex is the nation's largest manufacturing employer. Many of those employees are women and minorities. They are located to a large degree in the small towns of rural America. Quite frankly, they do not have many alternatives to their current employment, and most of the alternatives that they do have are in lower-paying service sector jobs. There is a tragic human cost involved in the closing of a mill in a small community.

SOLUTION TO PROBLEM LEGISLATIVE

The solution to the import problem that the industry is supporting is a legislative one, now before you as S. 549, the Textile and Apparel Trade Act of 1987. I won't go into the details of the bill, but I do want to reiterate its objectives, which are to halt the loss of market share to imported textile and apparel products and restrict future growth of imports to the long-term rate of growth of the American market itself. We hope that you will agree when you have the opportunity to consider this bill.

Thank you, Senator.

INDUSTRIAL BASE KEEPS US STRONG

Senator SANFORD. Thank you very much. I picked the textile industry as one of a number of industries that I could have picked to take part today, because I think there's been too much loose talk in Washington that the textile industry really isn't very important to us. I think that we need to make the point again and again that for all of our education and all of our research, if we don't have the kinds of policies that give us a strong industrial base, we're going to be weakened across the board, not only in terms of jobs, but also in terms of our capacity to support other kinds of development.

Dr. Beilman?

STATEMENT OF DONALD S. BEILMAN, PRESIDENT, MICROELECTRONICS CENTER OF NORTH CAROLINA

Mr. BEILMAN. Thank you, Senator Sanford.

I appreciate the opportunity to address this Committee on the important issue of the international competitiveness of United States industry. This issue is receiving considerable attention with the continuing erosion of our foreign trade position which last year soared to $140.6 billion, an all time high, and which was 19.5 percent above the previous high of the year before.

Industrial competitiveness is also receiving considerable attention at the federal and state levels of government because it is important to the long-term health of our economy at the regional and national levels. Many studies and recommendations have already been made with respect to government and private action for improving our international competitiveness position. The President's Commission on Industrial Competitiveness chaired by John A. Young is just one of the groups that has presented recommendations that address this critical issue.

In my testimony today, I will not repeat a lot of statistics or reference former studies, but will concentrate on the basic principles that are affecting the U.S. international competitiveness position. The observations and recommendations I make will not provide a simple answer to a very complex situation, but I hope they will provide the basis for reversing a situation that our universities, government and industry cannot tolerate for the future. The views I will express today are my own and reflect my experience as a business executive for thirty years and as president of the Microelectronics Center of North Carolina.

INDUSTRY SITUATION

The industry sector which I will concentrate on today is what is referred to as high technology. This includes such industries as semiconductors, telecommunications, materials, biotechnology and robotics. The U.S. high technology industry, up until recently, experienced a very favorable position internationally. High technology in the past few years, however, has joined core industries in experiencing trade deficits in the global economy.

In 1986, for example, the United States experienced a $13.1 billion trade deficit in electronic worldwide and an even more severe deficit with Japan, $20.5 billion. This is particularly of concern since high technology manufacturing, such as, electronics, is a crucial factor in maintaining a balanced economy in the United States between service and manufacturing.

There are several factors which contribute to the international competitiveness of high technology industry. These factors are education; university, government, and industry research and development; federal and state legislation; effective allocation of resources; and leadership.

While all of these factors are important to competitiveness in all industries, my comments today will focus on their impact on high technology.

High technology is particularly important for world leadership in the global economy because it provides growth to manufacturing industries, such as, electronics and materials. In addition, high technology industries, such as, materials and electronics, provide the basis for future competitiveness and leadership in many manufacturing core industries.

Modern electronics, for example, is a major high technology industry that has experienced tremendous growth worldwide. The electronics industry has surpassed $500 billion in annual production and could surpass $1 trillion by the year 2000, making it the largest industry other than agriculture. In addition, electronics provides important technology advances that increase productivity in all industries.

A manufacturing based economy is the key to maintaining a healthy economy and high standard of living. There is a strong interrelationship between high technology, electronics, and manufacturing because of the continuing necessity to increase productivity in manufacturing.

To support continuing improvements in productivity, the technology dynamics of industries such as electronics require access to substantial capital for productivity improvements and manufacturing competitiveness. Technology leadership and manufacturing capital are critical for competitiveness in a manufacturing based economy; in order to maintain technology leadership, the United States must find a way to maintain top quality education and better funded research and development.

RESEARCH AND DEVELOPMENT SITUATION

It is forecast that the United States will spend approximately $125 billion in 1987 on research and development. Of this total, approximately two-thirds will be spent on development and one-third on basic and applied research.

The federal government plays a major role in the research and development infrastructure of the United States. There are approximately 700 national laboratories with significant technical personnel resources that spend an estimated $18 billion annually. These laboratories are mission-oriented and concentrate on investigations related to such areas as defense, space and energy. The efforts of the national laboratories are heavily weighted to defense and contribute to the basic science and research infrastructure but not to commercial technology.

The National Science Foundation (NSF) also plays an important role in supporting a strong university infrastructure. It has been suggested that the current NSF budget request of $1.7 billion be doubled to $3.4 billion in the next five years. While these investments are critical to the long-term science and research infrastructure, technology development is not NSF's role or mission.

The Department of Defense (DOD) receives the major portion of the Federal research and development budget—approximately $47 billion of the total $65 billion Federal budget for the current year. This effort is heavily concentrated on the development of military weapons and provides only limited short-term derivatives for commercial applications. DOD's efforts are not oriented to commercial technology.

Thus, while the Federal investment in research and development is substantial, its orientation is on defense and the development of the research and development infrastructure, and does not directly address industrial competitiveness.

State governments have a primary role in providing the university infrastructure for education and basic research. The development of this long-term infrastructure is critical but does not directly address the requirements for commercial technology. States, however, are developing a shorter-term interest in commercial technology through new partnerships with industry. States are an evolving force and a new partner with a vested interest in economic development and the maintenance of a healthy manufacturing economy.

Industry emphasis is on applied research and technology development. To maintain competition, industry emphasizes the processes and manufacturing technology required for adaptation to today's technology dynamics. Industry not only focuses on the short-term results required for positive financial performance, but also recognizes the necessity for long-term research investment essential for continuing success.

While substantial resources are now being directed to research and development, at least half of this $125 billion is not directly contributing to industrial competitiveness. We need dramatically to capitalize on existing investments in research and development and selectively to reallocate key resources to support commercial technology for increased competitiveness of U.S. industry.

UNIVERSITY/GOVERNMENT/INDUSTRY RESPONSIBILITIES

Universities, government (state and federal), and industry are mutally responsible contributors to research and development. In the aggregate, the United States outspends all other nations in research and development. The existing human and capital resources of these three sectors must provide the necessary base for U.S. leadership and international competitiveness.

Our universities are considered to be the leading education and basic research institutions in the world, educating both domestic and foreign scientists and engineers for support of the global economy. While this leading role provides key long-term education and basic research, universities must change more rapidly to meet the escalating educational requirements to support high technology industries. While universities are critical contributors to basic research, they are not a major source of commercial technology in support of international competitiveness.

Government has the primary responsibility for supporting the state and national infrastructure requirements for education and basic research as well as providing the economic environment for industrial competitiveness. In the research and development domain, government supports the research and development requirements for defense, space, health and other special national requirements. It has the primary responsibility for maintaining the necessary services and engineering infrastructure but is not a major source of technology that is commercially relevant. In the economic domain, government can provide the fiscal and legislative conditions conducive to capital formation and international competitiveness.

Industry has always had and should continue to have primary responsibility for commercial technology application and production. Short-term financial performance must continually be balanced against longer-term research and technology expenditures. The capital and human resources required to meet the dynamics of today's technology dictate the continuous training of technical personnel and the shared responsibility with government for capital formation. As the sector primarily responsible for international competitiveness and most familiar with commercial technology requirements, industry should be given a shared responsibility to determine the national research and technology agenda and should be directly involved with extracting commercially-relevant research and technology from non-industry efforts.

In short, industry must be effectively involved in the allocation of these national research and development resources if industry is to continue to provide leadership for commercial application of technology for industrial competitiveness.

NEW CREATIVE APPROACHES FOR RESEARCH AND TECHNOLOGY

With intensive support from industry and government, commercial research-coordinating organizations can be structured to coordinate university and national laboratory resources. Such coordination is essential if we are to increase substantially the relevance of education and research within these key, high technology areas. The Semiconductor Research Corporation, or SRC, located here in Research Triangle Park, is one such research-coordinating organization concentrating on microelectronics. There are similar oportunities in telecommunications, materials, optics, textiles and other strategically important industries.

Another major new opportunity is the establishment of national-level commercial technology centers. Directed and managed by industry in key technology areas, these centers would work in conjunction with the research-coordinating organizations to accelerate substantially the transfer of non-industry research into commercial technology. Such centers would evaluate and develop the commercial technology potential of relevant research at our universities and national laboratories. These technology centers could also capitalize on evolving state participation and investments in selected key areas of industry technology.

These commercial technology centers could be jointly financed by sharing the cost among states, industry, and the Federal government where appropriate. The Federal share could be financed through reallocation of current resources from the Federal laboratories to facilitate their contributions to international competitiveness. Industry participation would assure commercial relevance and ownership by the primary sector responsible for competitiveness.

Funding of the centers could be an equal match of approximately $15 million per year or $45 million total per center. Eight to ten centers in key industry areas would provide $500 million of highly focused technology opportunities, leveraging the over $30 billion spent annually at our universities and national laboratories on research and development. An annual investment of approximately one half billion dollars to help correct a national problem which resulted in a $140 billion trade deficit last year would appear to make good economic sense.

Additionally, industry should be encouraged to pursue creative new joint initiatives for establishment of commercial manufacturing centers. These industry funded and managed programs could be established in key technology areas and would concentrate on manufacturing technology for international competitiveness. Fund by DOD would be appropriate to support related supplier industries that are crucial to national defense and security.

In summary, the Federal government and industry have an opportunity, through prudent reallocation of resources, to capitalize substantially on the enormous national research and development efforts to restore U.S. competitiveness in the global economy.

RECOMMENDATIONS FOR FEDERAL ACTION ON COMMERCIAL COMPETITIVENESS

The Federal government has the responsibility to help provide a total economic environment necessary to U.S. industry competitiveness. The following recommendations fall into three types of action: fiscal policy, legislation, and financial support.

IN THE AREA OF FISCAL POLICY

(1) New financial incentives to recognize industry's increasingly important role in training and retraining technical personnel for high technology manufacturing.

(2) A permanent industry tax credit to encouraging increased expenditures in external and internal research and development for manufacturing.

(3) Investment tax credits specifically for manufacturing equipment and facilities to encourage availability to capital for meeting requirements caused by technology dynamics.

(4) An aggressive long-term (5 years) capital gains credit to encourage investments in the long-term manufacturing industry.

(5) Encourage personal saving to create the increased capital required for industrial competitiveness.

(6) And, of course, the need to reduce dramatically the Federal deficit ($211 billion in 1986) to bolster general long-term economic growth.

IN THE AREA OF LEGISLATION

(1) Provide a competitive and equitable trade environment for U.S. manufactured products to help reduce deficit of $170 billion in manufactured products in 1986.

(2) Encourage cooperative industry efforts in manufacturing research and technology to balance aggressive international cooperative initiatives.

IN THE AREA OF DIRECT FINANCIAL SUPPORT

(1) Support new state and industry technology centers with reallocated funds from national laboratories to increase commercial technology contributions from non-industry sources.

(2) Directly support related commercial and defense requirements through DOD to reinforce U.S. competitiveness in selected manufacturing equipment industries.

(3) Encourage long-term support of basic education and research infrastructure at our universities by doubling the NSF budget to $3.4 billion in the next five years.

CONCLUSION

There are no actions that will ensure that U.S. competitiveness will immediately be revitalized. One thing is becoming more clear: with continuing erosion of high technology manufacturing as well as core industry manufacturing, significant changes by universities, government, and industry to solve the short- and long-term competitiveness problem will be required.

Universities must upgrade their educational program in the basic disciplines in order to prepare scientists and engineers to meet increasing demands in the U.S. manufacturing economy.

Government must reallocate research and development resources to increase the commercial value of current national research and development expenditures. Longer-term major reallocation of funds and technical personnel to commercial technology development is essential. In addition, governments in their enabling role for industry must take action to support specific legislation and fiscal policies that provide a competitive environment for manufacturing.

Industry must be actively involved in planning national research and development programs as well as in the management of the technology transfer initiatives undertaken by universities and government.

Ultimately, industry individually and collectively is responsible for providing the primary leadership for industrial competitiveness. Universities and government, however, must also take aggressive action to provide the talent and the environment to make industry's job possible.

Thank you.

Senator **Sanford**. Let me thank you very much. There are several other people I'd like to introduce as we are changing people at the panel. I notice one of our long-time effective leaders in the General Assembly, Senator Kenneth Royall here, and I'd like Kenneth to stand up and be recognized. And Senator Bill Staton. Bill, we're glad to have you. And Representative George Miller, at least I saw

George when I was coming in, and I think he's here. We thank you for being here.

My assistant in charge of the North Carolina office is Les Roark, who has been a newspaper man, he's been an assistant to the Attorney General, he's been a mayor, and now he's taking care of all the problems of all the people of North Carolina.

We've already seen the Mayor of Durham and I would like to ask him to stand again, Wib Gully, along with the mayor of Raleigh, Avery Upchurch. We're glad to have them.

Now, Tom Covington, who is the fiscal manager for the State legislature, is here. Tom Covington, we're delighted to have you.

Sitting behind me are my legislative counsel and the chief economic counsel for Senator Sasser. Senator Sasser's counsel is Lance Simmens. I'd like Lance to stand. And my counsel is David Poisson. They've both been very, very helpful in putting this together.

Now, I'd like to ask to join us at the front Earl Dowell, the Dean of Engineering at Duke, who is not only a talented administrator, but is a well-known scientist as well as an engineer.

And John Forlines, Chairman of the North Carolina Board of Community Colleges, who is a banker, president of the Bank of Granite, has been a trustee of Duke University for a long, long time, and has been chairman of our Business and Finance Committee there for the Board of Trustees. But it's his leadership capacity, first in his own community college in his community, and now, for a good while, as Chairman of the North Carolina Board of Community Colleges. I welcome both of you today. John, we'll start with you.

STATEMENT OF JOHN A. FORLINES, CHAIRMAN, NORTH CAROLINA STATE BOARD OF COMMUNITY COLLEGES

Mr. **Forlines**. Thank you, Senator Sanford.

I am pleased to be invited to address the distinguished committee about the contributions of North Carolina's community college system to the economic development of our State. I bring you greetings on behalf of the State Board of Community Colleges. It is with a sense of pride that I wish to outline some of the unique programs our system offers which enhance and sustain North Carolina's economic growth.

My own involvement with the community college system goes back more than 20 years to the establishment of Caldwell Community College and Technical Institute in my home county. It is my firm belief that the presence of the college—and the impact of its educational and training programs—has made a real difference in the prosperity and economic stability of our county. I have seen our neighboring counties benefit as well—drawing on the resources and opportunities available through Caldwell Community College and Technical Institute.

I know that many businesses have chosen to locate into Caldwell County because of the college. They know that people will have the opportunity to learn the skills they will need to work in the factories and offices. Unemployment in my area is very low, and I believe it is due in no small measure to the training and retraining opportunities we have available because of the community college system.

THE COMMUNITY COLLEGE SYSTEM

Let me begin by briefly telling you a little about our system. The community college system was founded in 1963 to provide the adults of North Carolina with technical and vocational training, two-year college parallel and adult basic education courses. That is our mandated mission. This mission, with its emphasis on occupational skills training, is unlike that of most other community college systems in the nation. Over 75 percent of our program offerings are in technical or vocational areas—less than eight percent falls into college transfer programs.

There are 58 institutions in the system. The most anyone from any of the 100 counties in North Carolina should have to drive to reach a campus is 30 miles.

Our system has an average annual enrollment that exceeds 600,000 students. About one out of every seven adults in North Carolina enrolls in our system each year. We offer 258 different technical and vocational programs—we provide 99 percent of all adult basic education instruction—one out of five of all high school certificates is awarded by our system. Furthermore, we have developed—with the help of our State's business leaders—several unique programs designed to meet their specific needs.

BUSINESSES AND INDUSTRIES HELP

Local business and industry leaders play a vital role in advising our colleges on the changing needs of their particular business or industry. By serving on local advisory committees, they provide advice on skills which need to be taught, the proper equipment needed for training, and the related courses needed to develop lifelong learning skills. Businesses and industries also invest in our colleges by providing both statewide and local scholarship money, donating equipment and loan personnel who have specialized skills to help teach our students.

Among the unique programs designed to meet the special needs of business and industry, is our much-copied New and Expanding Industrial Program. The North Carolina community college system established this program in 1963—the nation's first training program expressly designed to promote industrial growth by providing local, customized training to new or expanding manufacturing and service companies. Since 1963, more than 171,925 employees from 1,972 companies have taken advantage of this special program.

In North Carolina, the agency responsible for recruiting new industries is the Department of Commerce. Close cooperation between that agency and the community college system has been critical to the recruitment of new industries. Our community colleges are involved from the first contact of a prospect. We participate as a member of the "team," providing our training expertise and designing and providing customized skill training to new industries.

In 1984, we established another pioneer program—a network of small business assistance centers in our system. We now have centers located on 34 of our campuses. Each provides technical and managerial assistance to small business owners, would-be owners or their employees.

The State Board considers this assistance to small business owners to be critical to our state's continued economic progress. There are more than 126,900 small businesses in this state. Nearly 97 percent of all North Carolina businesses employ less than 100 people. Moreover, we estimate that by the year 2000, small business will be providing about 900,000 jobs to our citizens. In this year's budget we are requesting funds to finish expanding this important program to all 58 of our campuses.

Our system also has a program for assisting traditional industries, such as textiles, furniture and other manufacturing industries. Our cooperative skills centers are designed to allow our institutions to work with local industries to assess, design and implement local training programs for production workers and first-line supervisors. This program is designed to provide specific skill training for small groups of industrial employees, especially as their industries upgrade and modernize their facilities to meet the challenges of overseas competition and drastic changes in technologies.

CONFERENCES WITH BUSINESS AND INDUSTRY LEADERS

Over the past year, we've been involved in a conference series with North Carolina's business and industry leaders—trying to find out what exactly their needs are and where they believe their businesses are going in the coming years. These conferences have been held at a time when our economy is shifting away from a base in traditional industries toward more high technology and information-based industries. And our traditional industries must incorporate high-technology into their production processes in order to be competitive.

All of these changes mean that the state must improve the general educational levels of our citizens—those currently working as well as those yet to enter the workforce. The leadership in North Carolina—both business and political leadership—is aware of this need, and it accounts for the good support they have given to the community college system and to education at other levels.

I believe that community colleges are in a unique position. We offer the programs that will help a high school youth get a better start or a dropout recovery from a false start. We are equipped to offer training for the employees of a new business, an existing industry or an entrepreneur trying to get started. We offer displaced workers a new direction, and welfare mothers another chance.

OUTLINE OF CONFERENCE IDEAS

We help conferences to discuss electronics, construction, metalworking, textiles and apparel, agriculture, and seven other industry groups. In every case, we raised awareness on both sides of the needs and opportunities we have if we work together. Let me outline some of these ideas for you.

First, Communications: Most business leaders expressed the need to stay in touch with the educational community on an ongoing basis and to expand contact, both individually and through their various business associations. Must felt that business/industry advisory committees have the potential to be a useful tool in outlining local business and industry needs, but that these committees must be more effectively used.

Second, Quality: Business and industry expect high quality in every facet of our program. They stress the need to create a "culture of quality" within our institutions. That, they believe, will translate into an "Attitude" toward quality that they want all their employees to have. They feel that the success of the student—providing him or her not only with the mechanical skills but also with a "quality-oriented" mentality—should be our aim.

In order to meet business expections of quality, it is imperative that we have modern facilities, up-to-date equipment and well-qualified instructors. Changing technology makes it difficult for colleges to keep up-to-date, but the programs quickly become useless if they are not current.

Third, Retraining: Business leaders are telling us that their retraining needs will have to be varied—and in some cases—customized to fit specific local needs. Some employees will be sent through curriculum programs to get advanced technical training, others will need short-term training to provide specific new skills or to help them adapt to new technologies.

Fourth, skills needed in new employees: More and more, I hear from business leaders that employees must possess basic knowkedge of math, reading and scientific principles skills in order to make it in todays workplace, However, they also stress listening and human relations skills, and analytical ability as among the basics each student should have before graduating.

Computer skills are also in demand—and are being used by a wide range of employees. A greater need exists for workers who are able to apply computers to a variety of tasks—than for people who are experts or specialists in programming.

Fifth, work with public schools: The community college system and the public schools must work more closely together in providing joint services—or what we in educational circles call "artculated" programs—in order to turn out better prepared and higher-skilled graduates from our technical and vocational programs.

We are making some significant headway in this area. High school students can now take college-level courses through our community and technical colleges. Today more than 3,500 high school students are receiving additional training because of cooperative agreements between our institutions and local school boards.

NEW VOCATIONAL EDUCATION INITIATIVE

Another innovative initiative for bettering the delivery of vocational education in this state—and one I heartily endorse—is increasing efforts to establish "2 plus 2" programs. Under 2 plus 2, high school students interested in vocational or technical careers begin learning the fundamentals of those careers in high school. Their junior and senior years would be planned to lead logically—and without loss of credit—into a two-year degree program or a one-year certificate program at one of our institutions.

Upon graduation for a community or technical college with a technical degree, the student would have more than a two-year program. He or she would have four years of preparation—two years in high school and two in the community college system.

Next fall, five of our colleages will be participating in pilot "2 plus 2" programs across the state. In fact, Caston College in Dallas will be working with its local county public schools system in developing a school of technology in the area.

Both the State Board of Community Colleges and the State Board of Education have endorsed increasing articulation efforts between our two systems. At a joint meeting this January, the boards broadened the membership of a departmental articulation committee to include an institutional president and dean, a public school superintendent and principal, and a member from each of the boards.

LITERACY SKILLS

On another note let me speak a few moments about a group or North Carolinians whose plight threatens to undermine—if not destroy—the economic growth and stability of this great state. I speak, or course, about the near million of our fellow citizens who lack even basic literacy skills.

The last census report by the United States government found more than 1.5 million adults in North Carolina never completed high school. Over three-quarters of a million adults—835,620 to be precise—had less than an eighth-grade education. For a state that prides itself on being progressive—this is simply not acceptable.

By law, the North Carolina community college system is the primary deliverer of adult basic education. We have our work cut out for us. Almost four years ago, the State Board directed that an all-out effort be made to bring this problem under control, and eventually eliminate it.

For four years, our system has undertaken a concerned systemwide and statewide adult literacy initiative. It is our aim to enlist all available means of support—public and private—state and federal—to identify and enroll as many adults who need these basic reading, writing and math skills.

We believe this course of action is only common sense. Today's job market demands workers with rudimentary learning skills for even the most basic jobs. Adult literacy training fits hand in glove with our system's primary mission of providing occupational skills training. For after all, how can you teach a man or woman any type of technical or vocational trade when they don't even possess the skills needed to read the textbooks.

Finally, I am heartened at the continued support that Congress has shown for education and training programs, in light of the present Administration's efforts to cut or eliminate them. I hope that you will continue to ensure that All our citizens can afford a higher education by resisting efforts to trim the budget at the expense of our greatest natural resource—the human mind.

I ask you for your continued support of student financial aid programs—and also, your support for vocational education and job training programs for the unemployed or displaced worker.

The Pell Grant program has been particularly important to community colleges and, today, enables 2,265 students to pursue a technical or vocational education through our system.

The rapid changes in technology virtually guarantee that more and more workers will face displacement in mid-career because of out-dated skills, and I believe that we must offer them the chance to be retrained. The state's economy needs their productive capacity—and in human terms—we cannot afford to abandon them.

I wish to thank this distinguished committee for allowing me the opportunity to express—not only the outstanding work of the community college system—but some of the problems we All will face if we neglect to plan effectively for tomorrow. These are important times—and we face important issues—not only in North Carolina, but across the nation, too. Aesop's fable of the ant and the grasshopper should remind us that only those who prepare for tomorrow will survive when winter comes.

I sincerely thank you for the opportunity you have given me to bring you the story of the North Carolina community college system.

The CHAIRMAN. Thank you very much, Mr. Forlines. Now, Dean Dowell, I'm just so delighted to see you and have you here to wind up this meeting of, I think, very fine testimony that will be extremely helpful to the Congress. I appreciate your being here in the clean-up spot.

STATEMENT OF EARL H. DOWELL, DEAN, SCHOOL OF ENGINEERING, DUKE UNIVERSITY

Mr. DOWELL. Thank you. It's a pleasure to be with you, Senator, and to have this opportunity to say a few words about the federal role in engineering and science education.

The balance of trade deficit with the Japanese, not to mention the Canadians and the Europeans, is a sore subject with most American policy makers. Many recognize the economic competition for what it is: the most serious competition the United States has faced in several generations. And the Japanese know, even Prime Minister Nakasone is so impolitic as to state publicly, that they are winning this competition.

Several reasons have been cited for the Japanese success including cultural differences, Americans unwilling to live within their present means, and unfair Japanese trade practices. Here we focus on one aspect of the competition, and possibly the most important factor, the educational systems in Japan and the United States.

A BETTER EDUCATED WORKFORCE

The American University system has few peers in scope or, at its best, in quality. There must be several dozen American Universities of the quality of Kyoto and Tokyo Universities, the two best in Japan. But the Japanese workforce is better educated and apparently more highly motivated. How does this come about?

It is generally agreed that the Japanese have a superior elementary and secondary educational system. It is not reasonable to expect that American Universities can overcome in four years the shortcomings of the previous twelve. Moreover in both countries nearly half (slightly less in the U.S. and more in Japan) of the workforce never have a fulfilling University experience.

The reward for superior performance in secondary education in Japan is high as is well known; by contrast the Japanese University has traditionally served as a gatekeeper for industry and the business world. In Japan, the University one attends is determined by one's performance in secondary school and the company where one will be employed is determined by the University one attends. A late bloomer in Japan is at a distinct disadvantage!

U.S./JAPANESE SCHOOL SYSTEMS COMPARED

But perhaps the most significant difference in the educational systems of the United States and Japan, at least philosophically, is at the post-graduate level. In the United States, the best and the brightest go on to some form of post graduate education in large numbers. To law school, to medical school, to business school and, yes, even to graduate school in the arts, sciences and engineering. Each year in the United States we produce new graduates in approximately these numbers, 35,000 lawyers, 15,000 physicians, 250,000 bachelors degrees in business, 70,000 masters degrees in business (MBA), 70,000 bachelors degrees in engineering, 18,000 master degrees in engineering, and 3,000 Ph.D. degrees in engineering and another 3,000 in the physical sciences.

What are the Japanese doing? In round numbers, they produce 500 lawyers, 1,100 physicians, 100,000 bachelors degrees in business, there is no comparable MBA in Japan, 70,000 bachelors degrees in engineering, 8,000 masters degrees in engineering, 600 Ph.D. degrees in engineering, and 600 Ph.D. degrees in the physicial sciences.

What do we conclude from all this? The Japanese are comparable only in the number of bachelor degress in engineering. Of course, the Japanese population is approximately one half that of the United States and one should double all the Japanese numbers to obtain a per capita comparison. On that basis the Japanese are well ahead in bachelors degrees in engineering, but still well behind in other areas especially law, medicine and business. Thus if superior numbers in graduate education especially law, medicine and business (and most would believe superior quality as well) is the way for America to win the competition, we should have won long ago. But apparently it is not. This does not mean, however, that the Japanese workforce is not well educated. It is a matter of being educated differently.

The Japanese system has a real advantage in, what we would call in the United States, continuing education, it is an education provided by challenging assignments from one's employer and it is being rewarded for one's contribution to the team effort at the XYZ corporation rather than one's credential from ABC university. It also is being given one or two years in America or Europe at full salary plus a living allowance to learn about another culture (even if, as one may perceive, an inferior one), to improve one's foreign language skills (after having had eight years of English and two years of another foreign language) and, to have the opportunity to work with a foreign scholar (usually in engineering or science). All of this is being done not to receive a credential or degree (that might lead to a greater potential for employer mobility in the Western World), but to transfer technology in the most effective and perhaps the only effective way it can be transferred, from one person to another.

By contrast, consider the American system of continuing education. Often it is focused on a credential or degree without too much attention as to the quality of the program. Geographical convenience is a strong factor in program selection. The goal of the students/employees is frequently to enhance their mobility in the marketplace. Many times there is an unhealthy tension between the employer who is providing the financial support for continuing education (and who may have used this benefit in recruiting the employee) and the employee who looks to continuing education as a way of leaving an undesirable situation or moving on to a more attractive one. Only occasionally do employer and employee agree that this educational experience is being pursued to improve the employee's productivity in his present position.

TO CHANGE THE COURSE OF THE COMPETITION

Is all lost? No, surely not. We are fortunate by circumstance of natural material resources to have an inherent advantage with respect to both the Europeans and Japanese. But our most valuable resources, as well as theirs, is people. And we neglect their education at our peril.

Then, what to do? Fortunately, if not altogether consciously, we have already done some things to our long term national benefit. And there are certain demographic trends which are favorable to our cause.

As Prime Minister Nakasone has so indelicately pointed out, Americans have often been in turmoil with respect to ethnic groups and their status in our society. He has further noted the advantage that Japan enjoys by way of having a more homogenous society. But, in point of fact, there is a large segment of Japanese society with fully half the talent and energy which is in quiet tension with the other half. Japan has yet to face the challenge of fully according women their equal place in Japanese society. America, for all its faults, has done much better.

On another front, the Japanese population is aging at a more rapid rate than ours. Age may bring wisdom (as I get older I like to think so), but it surely slows down the assembly line worker. And robotics, folklore to the contrary, has not replaced the manual worker in Japan. Also the relatively earlier retirement age in Japan compared to America is a challenge for them. Recognizing all this, it is not surprising that recent news accounts talk of plans for retirement communities for Japanese retirees in other countries in order to minimize the cost of supporting this expanding older population. Will the tradition minded Japanese accept this?

But do we need to depend solely upon Japanese to lose the competition by some miscalculation or can we take steps to win it?

Here are some possibilities.

Emphasize performance, not certificates, at every educational level including continuing education.

Strengthen the ties between industry and academic. We are not or should not be enemies. Indeed the Japanese are coming to America to learn how we have developed good working relationships between university and corporation. But we can and must do better.

The Federal Government, rhetoric to the contrary, is unlikely to play any significant role in elementary and secondary education. But those of us in the some 3,000 colleges and universities in this country can speak up for the importance of our colleagues in the earlier years of education and their programs. We can support that local bond issue and suggest that a local or state tax to support education might be in order. In short, those of us with tenure in universities could use our precious academic freedom to support something important and unpopular that others may not.

No doubt there are additional steps we can take, but whatever we do we must do it together. For in the final analysis the Japanese are not the problem; as Pogo reminds us, it is you and me.

PLACE COMPETITIVENESS HOPE ON PEOPLE

Senator **SANFORD**. Thank you very much. I might add by way of bringing this excellent meeting to an end that the testimony I've heard today points out the fact that there's no one single path to greater competitiveness. There are a great many things that need to be done. As far as education is concerned, it seems to me that we can make the case that education is fundamental to everything else, and no matter what kind of trade policy we have and no matter how cleverly it is put together, we won't have a truly competitive nation, nor will we have the quality of life we desire, if we neglect the human resource, and that's why I think we need to put the emphasis as we talk about this problem on people and their education.

I can tell you right now that we don't spend enough money at the elementary and secondary level, that we don't treat teachers and pay teachers as the professionals that they are, and until we do, we are going to continue to have a level of illiteracy that's unacceptable. We're going to have a level of inadequately educated people that should be unacceptable in this nation. And until we pay attention to opening doors and providing opportunities for every young person, regardless of the financial means of the family, to go on for higher education, we're not going to have a nation running at its full potential.

In answer to the question, "Do you think that it would be safe to get the deficit down to $108 billion?" the Chairman of the Federal Reserve Board at a recent budget hearing said, "I don't think there's any danger of the Congress cutting out too much, so I don't even need to answer that question." Similarly, I don't think there's any danger of our investing too much in education. I wish we were reaching the point where we needed to make such a decision. But unfortunately I think we have a long, long way yet to go.

STAFF PRESENT

I thank all of you very much for coming to this hearing.

[Whereupon, at 12:31 p.m., the Committee adjourned subject to the call of the Chair.]

NORTH CAROLINA COMMISSION ON JOBS AND ECONOMIC GROWTH

REPORT

NOVEMBER 12, 1986

TABLE OF CONTENTS

Executive Summary 1

Commission Membership 1

Summary of Final Recommendations 3

Commission Activities. 10

Commission Report. 12

Appendices

Appendix I - Letters to State Boards, Commissions and Agencies

Appendix II - Legislative Proposals

Appendix III - Survey of North Carolina Businesses

STATE OF NORTH CAROLINA
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[illegible]

November 12, 1986

To Lt. Governor Bob Jordan:

The Commission on Jobs and Economic Growth is pleased to submit the final report for review. This report includes findings, recommendations, actions and legislative proposals that have been developed over the past eleven months.

Our members have taken seriously your charge to take a broad look at our state's economy and develop realistic proposals for promoting future economic growth in North Carolina. We have carefully looked at the problems and the opportunities in developing jobs and improving our labor force, in reaching our natural resource base potential and in addressing the special needs of our rural areas.

North Carolina possesses a unique quality and the Commission sought to maintain this special character while seeking answers to continued economic growth. We recognize that a successful future begins with a plan of action. The Commission submits these proposals, developed with dedication, enthusiasm and a sense of challenge to build on the present and look to the future.

Respectfully submitted,
Jim Melvin
Jim Melvin, Chairman
North Carolina Commission
on Jobs & Economic Growth

EXECUTIVE SUMMARY

Background

The North Carolina Commission on Jobs and Economic Growth was created by the N. C. General Assembly on July 15, 1985, amid a growing recognition that the state economy had come to a critical crossroads. Though the overall economy was fairly healthy, a number of important economic sectors and geographic areas were experiencing serious difficulties -- difficulties that threatened to worsen with time. The state's traditional economic development strategy, highly successful in prior years, was not responding to emerging needs.

The enabling legislation states that the Commission "shall be an advisory commission and shall work with private and public institutions and with individuals to identify the major economic challenges facing this State and to develop practical proposals for meeting these challenges to be submitted to the executive and legislative branches of State government."

The Commission was instructed to report to the 1987 Session of the General Assembly, and was provided a budget of $125,000 for Fiscal Year 85-86 and $125,000 for Fiscal Year 86-87.

As required by the enabling legislation, the thirty members of the Commission were appointed by Lieutenant Governor Bob Jordan. They are leaders in business, finance, agriculture, education, government and public service, and they represent communities from all regions of the state.

Chairman Jim Melvin convened the first meeting of the Commission on January 30, 1986. The Commission held five meetings to which they invited economic development experts from throughout the state. Three committees -- Labor Force Development, Natural Resources and Public Facilities, and Jobs Development -- also made recommendations. These recommendations were compiled in a preliminary report released on September 30, 1986. On that day, the Commission met to review and approve the recommendations of the three committees. Following is the Commission's final report, including specific legislative recommendations to be proposed to the 1987 session of the General Assembly.

Findings.

The overriding theme of the Commission report is that North Carolina must be more aggressive in pursuing a "growth from within" strategy to complement its traditional emphasis on industrial recruitment. The Commission called for new economic development initiatives based on partnerships between state and local government, educational institutions, and the private sector.

Historically, North Carolina's economic growth strategy has focused primarily on industrial recruitment -- the attraction of plants and corporate headquarters from other states. For decades, this strategy has been effective, particularly for cities and towns located along the state's major interstate highways.

In recent years, however, other states have developed equally aggressive industrial recruitment programs. Meanwhile, the rate of industrial relocations has slowed considerably. For these reasons, the Commission emphasized the need to complement industrial recruitment efforts with new initiatives designed to (a) support the expansion of firms that are already located in the state, and (b) encourage the startup and growth of new small businesses. At the same time, the Commission recognized that a better trained and better educated workforce will be critical to future economic growth, both for industrial recruitment and the development of indigenous business.

Finally, the Commission called for a special emphasis and commitment to reviving the state's smaller towns and communities that have not shared in the general prosperity of the state.

Labor Force Development

There is general agreement that considerable change will occur in industry labor demand between now and the year 2000. During the late 1970's and early 1980's, only 5% of the 20 million new jobs created in the nation were in manufacturing, while 90% were in the service and information industries, occupations that require a mastery of basic computation and communication skills and formal training beyond high school. Of existing manufacturing jobs, it is estimated that 5 to 15 million will be restructured, as the rate of automation accelerates in manufacturing industries struggling to regain and maintain a healthy competitive position in international markets.

The Commission recognizes that the quality of the state's human resources -- employees who can learn, grow and adapt to changing markets and innovative technologies -- will ultimately determine the degree of success or failure of North Carolina's future economic development. The Commission is therefore recommending 14 initiatives to improve the productivity of the current workforce and remove barriers to maximum labor force participation in the future. Specific recommendations include:

- full implementation of the Basic Education Plan;
- systematic statewide efforts to attack the problem of adult illiteracy;
- improved coordination of federal, state, and local job training efforts, particularly for public assistance recipients and displaced workers;
- new and expanded initiatives to improve the job readiness of youth as they enter the labor force and the linkage between high schools and community and technical colleges.

Natural Resources and Public Facilities

Over the past few years, the state's population has grown to over 6,300,000. We have witnessed growth in income and continued low unemployment rates, but this population growth has increased the demands on our natural resources and public services.

The rapid growth of the state's metropolitan areas, combined with declining federal support for community and economic development, have placed tremendous pressures on state and local governments to respond to service demands and the desire to protect environmental quality. Terms such as "growth choke" (major traffic jams throughout the day) and "urban sprawl" are now a very real part of North Carolina's urban lifestyle. Rural areas are also facing substantial reductions in federal funding but, at the same time, they are experiencing slower growth -- which limits local financing ability.

Meeting public facilities needs -- such as transportation services, education, water supply, wastewater treatment, hospitals, and solid waste disposal -- while protecting our environment and preserving our natural areas is critical to both our urban and rural areas.

The Commission is recommending 13 initiatives to establish concrete goals for infrastructure development, adopt new strategies, and finance essential services. Some of these are:

- establish a state Clean Water Loan and Grant program;
- establish a local Public Facilities for Economic Development program to assist and encourage comprehensive, longterm planning at the local level;
- enact legislation to establish a North Carolina Forestry Commission;
- expand the market development program for the state's fisheries industry.

Jobs Development

The industrial recruitment strategy developed by the North Carolina Department of Commerce has been copied by many other states as a model program, but the wisdom of utilizing industrial recruitment as the sole or primary tool for state economic development is now in doubt. There are fewer and fewer manufacturing plants considering relocation; the estimate is about 1400 plants (an average of 28 per state) each year. An increasing proportion of recruited industrial firms prefer to locate within metropolitan areas in order to access university and other state-supported research facilities, a factor that has contributed to wide dispersions in growth rates between urban and rural areas throughout the Southeast. Competition among all states for new firms has intensified, the growth of manufacturing has slowed, and national employment growth has depended increasingly on small new businesses and service firms.

The Commission is recommending 10 initiatives to broaden the base of economic development in North Carolina, including three recommendations targeted specifically at our states lagging rural economy. These include recommendations to:

- develop and use a range of new indicators of economic progress that go beyond current reporting of new jobs and new investments through industrial recruiting and expansion;
- strengthen and coordinate support for small business development, including the establishment of a one-stop permitting process;
- establish financing programs to address the start-up, expansion and/or working capital needs of North Carolina businesses;
- strengthen the support for existing manufacturing businesses.

Rural Development

The Commission suggests that a "growth from within" strategy will be particularly important for rural communities that have not shared in the general prosperity of the state. The report calls for a special emphasis and commitment to reviving the state's smaller towns and communities that have long been dependent on agriculture and traditional industries, both of which are in serious decline.

This finding led to a recommendation that the General Assembly create and fund a North Carolina Rural Economic Development Center. The Center would be charged with addressing declining conditions in the state's rural areas, with special emphasis on farming, the decline of manufacturing employment, opportunities for natural resource-based industries, and the loss of businesses in small cities. The Center will have as its primary mission the development of an action agenda for rural economic development, but it will also be involved with demonstration projects, research, training, and information collection and dissemination.

As another special incentive for rural communities, the Commission is also recommending that severely distressed rural areas be designated as "Growth Opportunity Counties." Businesses in these counties would be eligible to receive state income tax credits for new jobs created. The Commission also recommends that a portion of state water and sewer funds be targeted to rural areas.

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Dr. John Thomas
Chancellor
Appalachian State University
Boone, NC

Ms. Becky Williams
Economic Developer
Asheville Chamber of Commerce
Asheville, NC

Mrs. Winnie Wood
Chairman
Northeastern North Carolina Tomorrow
Camden, NC

Mr. Larry Wooten
Farmer
Currie, NC

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STAFF

Billy Ray Hall
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SUMMARY OF FINAL RECOMMENDATIONS

LABOR FORCE DEVELOPMENT COMMITTEE

Recommendation 1: The state universities and community colleges should develop methods to formalize communication with the private sector, to ensure that training programs adequately address current and estimated future labor demand. It is further recommended that a biannual report on progress in this area be submitted by the UNC Board of Governors and the Board of Community Colleges to the General Assembly Fiscal Research Division and Chairmen of the House/Senate Appropriations Committees.

Recommendation 2: The General Assembly should study the possibility of directing the UNC Board of Governors to better address the needs of the adult learner desiring to upgrade skills through the provision of flexible class scheduling and greater outreach efforts.

Recommendation 3: The state should upgrade the faculty and equipment at all state community colleges to ensure their system's ability to prepare the best possible labor force.

Recommendation 4: The state, in conjunction with support from the private sector, should allocate the necessary resources to address the literacy problem in North Carolina with the goal of a substantial reduction in illiteracy rates by the year 2000.

Action 1: Needs assessment survey, and strategy for implementation

Action 2: Statewide clearinghouse/referral/training service

Action 3: Support education of prison population

Action 4: Basic literacy requirement for drivers' licenses

Recommendation 5: The state, specifically the Job Training Coordinating Council formed under the Job Training Partnership Act, should work toward coordinating available job training funds at the federal, state and local levels, in order to best serve all North Carolina citizens, particularly those experiencing severe economic hardship, and those with physical, mental and emotional disabilities.

Action 1: Target public assistance recipients

Action 2: Target displaced workers

Recommendation 6: The General Assembly should work with private industry in providing employees quality day care services.

Recommendation 7: The state should continue implementation of the State Basic Education Program to ensure that every person has the opportunity to learn basic academic and vocational skills, and to ensure that every teacher is given ample opportunity for career enhancement and professional development.

Recommendation 8: The state should continue its dropout prevention initiative according to the schedule of implementation of the Basic Education Program.

Recommendation 9: Public schools and the community colleges should be mandated to work together to ensure that students who drop out of public schools are referred to the community college system or other appropriate service organizations.

Recommendation 10: The state should expand the Job Readiness Training Program and other successful school-to-work transition and guidance programs piloted in North Carolina in recent years.

Recommendation 11: The "2 plus 2" model that prepares high school students for post-secondary technical programs, and ultimately, for post-secondary advanced technical careers, should be initiated across the state.

Recommendation 12: The State Board of Education should make entrepreneurial education a priority and expand the range of opportunities and resources available to students across the state interested in this area. (See Recommendation 2, Action 1 in the section on Jobs Development.)

Recommendation 13: The State Board of Education should continue to identify and address education problems in rural areas.

Recommendation 14: The Board of Education, Board of Community Colleges and the UNC Board of Governors should recognize exemplary public/private partnerships for their importance to the future development of the state labor force. Information concerning efficient and effective partnerships should be gathered and disseminated throughout the respective systems to provide all schools with the background necessary to form similar partnerships at the local level.

NATURAL RESOURCES AND PUBLIC FACILITIES COMMITTEE

Recommendation 1: The General Assembly should create a legislative study commission on Regional Growth Trends and Development Issues.

Recommendation 2: The Department of Administration should develop a state public service facility plan that identifies public facility needs for a ten-year period with priorities established for biennium funding keyed to the ten-year plan.

Recommendation 3: The General Assembly should establish a Local Public Facilities for Economic Development program.

Recommendation 4: The state should establish a Clean Water Grant and Loan Program.

Recommendation 5: The Department of Natural Resources and Community Development should work with the League of Municipalities and the regional councils of local government to hold workshops to notify local governments of the July 1, 1988 deadline for either providing a municipal plan for compliance or compliance with the Federal Clean Water Act.

Recommendation 6: The General Assembly should enact legislation to establish a North Carolina Forestry Commission.

Recommendation 7: The Division of Forestry in the Department of Natural Resources and Community Development should initiate efforts to expand the use of low-grade wood fiber.

Recommendation 8: Emphasis on forestry education through the state forests and forestry extension personnel should be expanded.

Recommendation 9: The State Forester should pursue development of a Voluntary Training and Certification Program for logging operators as a means of preventing and reducing environmental damage during harvesting.

Recommendation 10: There should be an expansion of the fisheries market development program of the Department of Agriculture in cooperation with the Marine Advisory Service of the Sea Grant Program.

Recommendation 11: Support should be given to expansion of existing fisheries processing plants and recruitment of new plants.

Recommendation 12: Business assistance should be provided to fishermen and fish processing businessmen.

Recommendation 13: The fishing industry of North Carolina should pursue the development of a long-range plan with implementation proposals for the fisheries industry.

JOBS DEVELOPMENT COMMITTEE

Recommendation 1: The N.C. Department of Commerce should use indicators of economic progress that include measures of growth in per capita income, rate of new business formation and failures, growth rate of the number of self-employed, and the performance of primary and secondary schools.

Recommendation 2: The state should strengthen and coordinate support for small business development.

Action 1: The public schools, community colleges and university sytem should place increasing emphasis on entrepreneurship education.

Action 2: Establishment of a one-stop permitting program

Action 3: Support for small business assistance

Action 4: Coordination by the Department of Commerce, local governments, local chambers of commerce, committees and other economic development officials in the dissemination of information on small business assistance.

Recommendation 3: The state should establish financing programs that will address the start-up, expansion and/or working capital needs of businesses.

Recommendation 4: The State Treasurer should work with the Department of Commerce and the North Carolina Association of County Commissioners to investigate the feasibility of issuing umbrella industrial revenue bonds in North Carolina.

Recommendation 5: The state should pursue initiatives promoting Manufacturing Excellence among North Carolina manufactured goods.

Action 1: Continue and expand support for technology transfer initiatives.

Action 2: Broaden state support for existing small to medium-sized manufacturers.

Action 3: Improved coordination of existing resources

Recommendation 6: The state should establish an Export Development Center in the International Trade Division of the North Carolina Department of Commerce, capable of supporting exporters and responsible for increasing participation of North Carolina firms in world markets.

Recommendation 7: The N.C. Board of Science and Technology should undertake an inventory of applied research activities and capabilities in North Carolina, and determine the need for an applied research grant program.

Recommendation 8: The state should create a North Carolina Rural Economic Development Center.

Recommendation 9: The state should target a portion of water and sewer funds to rural areas.

Recommendation 10: An appropriate state agency should designate severely distressed rural areas of the state as Growth Opportunity Counties and establish a system of tax credits for businesses that create jobs within designated county units.

COMMISSION ACTIVITIES

Chairman Jim Melvin convened the first meeting of the NC Commission on Jobs and Economic Growth on January 30, 1986. During that first meeting the Commission developed a very aggressive work plan, and committed to holding meetings across the state. The members were divided into three standing committees: Labor Force, Natural Resources/ Public Facilities, and Jobs Development. These committees were charged to develop background information, hear from experts and make recommendations for consideration by the full Commission.

Five meetings of the Commission have been held -- January 30, March 27, May 13, July 11 and September 30, 1986. In addition, the three committees have each met on five occasions. The Commission and committees have convened in Raleigh, Greensboro, Haywood County, Asheville and New Bern. Coordination of these activities has been the responsibility of the Executive Committee of the Commission.

An important component in developing proposals is an accurate and adequate information base. Research on the state's economy and economic development programs has been directed by Commission staff. Realizing that new research was needed on rural area problems, the Commission contracted with MDC, Inc. to prepare specific information and recommendations. A contract was also awarded to the UNC-Greensboro School of Business to survey existing, new and recently expanded businesses in North Carolina to determine their views on state business assistance programs and desirable state economic growth policies. Various economic development strategies were shared with the Commission through presentations by representatives of the university system, NC Association of County Commissioners, NC League of Municipalities, banking community, regional councils of local governments, industrial development groups, and various state agencies. Department of Commerce Secretary Howard Haworth appeared before the Jobs Development Committee on August 28th.

In May, the Commission developed and adopted three recommendations which were approved by the 1986 Session of the General Assembly. These recommendations are:

Recommendation 1:

> The North Carolina Commission on Jobs and Economic Growth joins the League of Municipalities and Association of County Commissioners in support of the Regional Economic and Community Development Technical Assistance Act of 1986. The Commission further supports an additional provision for the act which would require regional organizations to hold annual forums for local officials, chambers of commerce, and other local groups involved in economic development to promote improved coordination across the region.

Recommendation 2:

The North Carolina Commission on Jobs and Economic Growth recommends that the General Assembly amend the New Technology Jobs Act of 1983 to remove the requirement of state ownership of incubator facilities receiving state funds. The Commission is supportive of administrative requirements that provide for repayment of state funds in the event an incubator ceases to fulfill its original purpose. The Commission further recommends there be no reversion requirement placed on non-allocated funds from 1985 for incubator grants.

Recommendation 3:

The North Carolina Commission on Jobs and Economic Growth recommends that the General Assembly of North Carolina update the corporate code so as to make our state attractive for the incorporation of major publicly held companies and that the economic development efforts of the state place special emphasis on encouraging major companies to incorporate here and, where possible, establish national, regional and division headquarters in North Carolina.

The summer meetings were devoted to committee and Commission deliberations on staff research, program reviews and recommendations. Information being gathered by other legislative study commissions was reviewed.

The preliminary report adopted by Commission members on September 30, 1986, culminated nine months of work, but the job was not yet complete. Over the next two months, refinement of the recommendations and drafting of specific legislative proposals was undertaken. The final report was adopted by the Commission on November 12, 1986.

REPORT OF THE NORTH CAROLINA COMMISSION ON JOBS AND ECONOMIC GROWTH

For decades, North Carolina has experienced steady economic growth and prosperity. The state's unemployment rate is 5.1 percent -- well below the national average. North Carolina has weathered the ups and down of the national economy far better than other states.

An important reason for North Carolina's economic strength is its diversified economy. The state's traditional economic base -- agriculture and manufacturing in textiles and apparel, furniture and tobacco -- is not dominated by any one industry. And, since 1980, North Carolina has enjoyed success in further economic diversification through the recruitment of high technology research operations and corporate headquarters.

North Carolina has also assumed a principal role in the global economy. Our state is ranked first in the Southeast and tenth in the nation in exports of manufactured goods. In 1984, North Carolina firms exported $4.3 billion in direct exports, or approximately 12 percent of the gross state product, accounting for 90,000 jobs in the manufacturing sector alone. That same year, approximately $1.1 billion in agricultural commodities were exported.

Foreign direct investment is also important to North Carolina. In 1982, 251 foreign firms were operating in North Carolina, employing over 92,000 people -- an employment increase of 36 percent since 1980.

On the other hand, North Carolina's traditional industries -- agriculture, textiles and furniture -- are in a state of decline. Farms are disappearing in North Carolina at a rate of 3,000 to 4,000 a year. The state's net farm income in 1985 fell 20-25 percent. In the textiles industry alone, 31,075 workers lost their jobs between 1978 and 1984. The rate of job loss in the furniture industry has not been as high, but employment declined by 7,500 workers during the period 1979-1984.

Historically, North Carolina's economic base has been heavily dependent upon traditional manufacturing. In 1985, 31 percent of the workforce was employed in manufacturing-related industry, compared to a national average of 19 percent. Within the manufacturing sector, four industries -- textiles, apparel, lumber and wood products, and furniture -- accounted for 55 percent of total manufacturing employment, compared to 16 percent for the nation.

North Carolina's traditional industries are located principally in the rural areas of the state. The decline of this sector of the economy has resulted in disparities in the growth rates of the state's urban and rural areas. According to a study conducted by the University of North Carolina's Department of City and Regional Planning and the Southern Growth Policies Board, over the period 1977-1982, the growth rates of population and employment in metropolitan counties were twice the rates of growth in non-metropolitan counties. Social indicators, such as the percentage of the rural population living in poverty and average rural educational attainment, mirror the declining economic health of the state's rural areas. Comparisons of other leading economic and social indicators exhibit similar regional disparities.

In addition to regional differences, particular sectors of the population are facing greater hardship than others. Women make up two-thirds of the production operatives in the textiles and apparel industry, occupations most affected by automation and relocation decisions. In 1984, the unemployment rate for women in North Carolina was 8.3 percent -- more than 50 percent higher than the unemployment rate of 5.4 percent for men. In 1985, the Employment Security Commission of North Carolina estimated the unemployment rate for blacks was 10 percent; the overall rate for that year was 5.4 percent. The 11 percent rate for black women was the highest of all minority groups in North Carolina in 1985.

In summary, North Carolina's economy is characterized by the strengths of the present and the critical challenges for the future. The choice in our economic development strategy is between "business as usual" and the development of bold and innovative ways to bring quality jobs and a higher standard of living to people all across the state. The Commission sought to maintain North Carolina's special character while seeking answers to continued economic growth.

Labor Force Development

Economists predict North Carolina's labor force will be 3.7 million people by the year 2000, an increase of 570,000 over the next fifteen years. The quality of the state's human resources -- employees who can learn, grow and adapt to changing markets and innovative technologies -- will determine the success or failure of North Carolina's future economic development.

There is general agreement that considerable change will occur in industry labor demand between now and the year 2000. During the late 1970's and early 1980's, only 5 percent of the 20 million new jobs created in the nation were in manufacturing, while 90 percent were in the service and information industries --occupations that require a mastery of basic computation and communication skills and formal training beyond high school. Of existing manufacturing jobs, it is estimated that 5 to 15 million will be restructured, as the rate of automation accelerates in manufacturing industries struggling to regain and maintain a competitive position in international markets.

Transitions are already occurring, with considerable future adjustments inevitable as demographic shifts and technological change continue to transform the workplace. State policies that affect the productivity of the workforce and the removal of barriers to the maximum participation of all North Carolina citizens in the workforce are being given increasing attention on the agendas of state government policymakers.

The challenge is to ensure North Carolina possesses the necessary attributes to enable us to adapt to future changes without considerable human and resource adjustment costs. It is estimated that, by 1990, three out of four jobs will require education or technical training beyond high school. In addition, the 1990's will see a larger proportion than the previous decade of workers between the ages of 25-44, leading to increasing competition for higher level jobs and greater interest in lateral opportunities to increase job satisfaction. A stronger basic skills base will be the prerequisite for career flexibility as adults change occupations an anticipated four to five times over the course of a lifetime.

Currently, North Carolina is ranked 48th in the nation in the percent of the workforce with a high school education. The state high school completion rate is 50.7 percent compared to a national average of 64.5 percent.

These average figures point to an even deeper problem -- differences in educational achievement levels between regions and among sectors of the population. According to the 1980 census, the high school completion rate in rural areas was 40.8 percent, compared to a rate of 60.3 percent in urban areas. Also in 1980, North Carolina's nonwhite population showed a high school completion rate of 43.6 percent, compared to a 57.8 percent rate for the white population. National rates were significantly higher, 72.1 percent for the white population and 56.8 percent for the nonwhite population.

In 1980, the U.S. Census Bureau reported that more than 1.5 million adults over 25 years of age in North Carolina never finished high school -- and over 800,000 of them lack basic reading, writing and math skills. According to their estimates, the number of nonliterate adults increases by approximately 20,000 people each year -- equivalent to the high school dropouts each year. During the school year 1984-85, 23,779 students in North Carolina dropped out of high school. In a 1983 study done by the North Carolina Department of Public Instruction, the estimated percentage of students in North Carolina who enter the ninth grade and drop out prior to graduation is between 26 percent and 28 percent. The same study also documented that the majority of dropouts come from families in which one or both of the parents did not graduate from high school. The majority of North Carolina's prison population, over 70 percent, never graduated from high school.

Investment in North Carolina's human resources will receive the greatest return if labor force development is built from within. Our labor force's unique strengths -- such as a strong work ethic and commitment to community -- must be preserved. Its weaknesses -- such as a generally low level of educational attainment -- should be recognized with the objective of targeting available resources to thoroughly address deficiencies.

The disabled population of North Carolina is high and on the increase. Fifteen percent of our population is considered disabled. With proper training, counseling and opportunity, many can be fruitful employees and members of their community. In 1981, there were over 132,000 disabled workers in North Carolina. The education and training of the disabled population must be a priority.

Public policies to promote labor force development must be based on the assumption that jobs in the future will require, at the minimum, two years of technical training after graduation from high school. The focal points of North Carolina's labor force development initiative should be entry-level development of young people and continuing education efforts for the adult labor force.

An additional dimension to any discussion of labor force preparation for the future is the importance of forming stronger state/local/private partnerships. The effectiveness of public initiatives for education and training can be strengthened by existing resources in the private sector once these resources are identified and utilized with greater efficiency.

Adult Training

North Carolina's population is expected to exceed 7 million by the year 2000, a growth rate of approximately 13 percent -- or 860,000 persons -- since 1985. According to migration projections published by the N. C. Office of State Budget and Management, the North Carolina population between the ages of 0-15 will increase by only 1 percent by the year 2000, and the working age population between the ages of 16-64 will increase by 13 percent. But the largest percentage increase -- 35 percent -- will be in the over 65 age group.

The aging of the population base means the state's workforce will also be aging. The adult population between the ages of 25-64 is expected to increase by 17.4 percent during the next ten years. This increase will be evenly divided between younger (25-44) workers and older (45-64) workers -- in contrast to the pattern of the previous eleven years, when over three-fourths of the increase of the working age population was in the younger age group.

In North Carolina, two state agencies have primary responsibility for adult education and training. The Community College System and the North Carolina University System enroll more than 700,000 full and part time students each year.

The Community College System crosses the state with a network of 58 colleges and technical institutes. In addition to one and two year degree programs, several adult literacy programs are admininstered -- such as Adult Basic Education (ABE), Adult High School (AHS), and the General Educational Development (GED) testing program. One out of every five high school diplomas or equivalency certificates given in North Carolina is through a community college. Customized industry training programs offered by designated colleges, such as the Cooperative Skills Training program for traditional industries and the New and Expanding Industries program, complement other state economic development programs with their ability to design and deliver specialized worker training programs within a short period of time.

The University of North Carolina System is nationally recognized for the quality of its faculty and degree programs. Through 1985-86, 107,000 students attended full-time one of the sixteen campuses throughout the state. In the 1984-85 school year, 22,400 degrees were conferred. North Carolina also has an extensive network of 38 private colleges and junior colleges attended by 59,000 students in 1982.

The Department of Natural Resources and Community Development's Division of Employment and Training administers the federal Job Training Partnership (JTPA) program for North Carolina. JTPA provides funding to states to establish programs to prepare youth and unskilled adults for entry into the labor force. Services include basic education, training, counseling, and screening for appropriate job placement. JTPA's objective is to build a partnership of business, education and government that makes job training programs more responsive to workplace demands. In FY 84-85, 15,829 adults (2,150 of which were welfare recipients) and 14,205 youth participated in JTPA programs.

The state's Department of Labor performs oversight functions for four separate programs in pre-apprenticeship training funded by the JTPA. Pre-apprenticeship programs help train about 1,000 workers annually. Apprenticeship training is supervised through certification of the programs of each employer. In 1985, there were about 3,000 workers in the apprenticeship program.

Many disabled people can utilize many of the ongoing programs in the universities, technical schools and JTPA. Utilization of special facilities such as schools for the blind and deaf, work-oriented rehabilitation facilities and special secondary school programs for disabled students must be enhanced.

Over 75 percent of the workforce in the year 2000 is already working today. Today's workforce will be the majority of the workforce at the end of the century, and most of its members will require additional education and training several times during their careers. North Carolina already has in place the basic structure necessary for providing education and training with its nationally recognized university and community college system. The challenge is to fine-tune that system to meet the needs of the future workforce and the changing economy.

Recommendation 1: **The state's universities and community colleges should develop methods to formalize communication with the private sector, to ensure that training programs adequately address current and estimated future labor demand. It is further recommended that a biannual report on progress in this area be submitted by the UNC Board of Governors and the Board of Community Colleges to the General Assembly Fiscal Research Division and Chairmen of the House/Senate Appropriations Committees.**

Basic public data that match available jobs with available workers are often incomplete or inadequate. A council of business leaders could serve as a direct link between local training efforts and the immediate and long-term labor needs of area employers. Local private industry councils (PICs) formed under the Job Training Partnership Act could serve as the foundation for these public/private efforts. Regardless of the vehicle, linkages between state and private sector training resources should be improved to avoid duplication and fill gaps in skills training.

Recommendation 2: **The General Assembly should study the possibility of directing the UNC Board of Governors to better address the needs of the adult learner desiring to upgrade skills through the provision of flexible class scheduling and greater outreach efforts.**

The "Third Century" project funded by Z. Smith Reynolds identified as an essential mission of higher education the commitment to provide continuing access to all sectors of the population. Nationally, the growth rate in the 25-50 age group is expected to be somewhere between 25 and 50 percent annually. Two-thirds of the courses which these people take are provided through non-traditional higher education. Seventy-two percent of the students 25 years and older are part-time.

To serve the education needs of the future population, universities must consider more than just the needs of traditional college-age youth (18-24), a declining segment of the population. Universities must begin to meet the needs of an older student body with greater responsibilities to family and the workplace.

A good example of an adult outreach program is the Industrial Extension Service of North Carolina State University. The University provides an accredited Masters of Engineering degree through the use of videotapes and the administrative support of several large private industries and smaller academic institutions.

State support for increasing access to higher education for North Carolina's adult population could take the form of awarding F.T.E. credit to institutions for courses that are approved by the UNC Board of Governors. This will facilitate carrying quality programs into the field by providing, through the normal funding mechanism, the resources necessary to conduct off-campus activities.

Recommendation 3: The state should upgrade the faculty and equipment at all state community colleges to ensure their system's ability to prepare the best possible labor force.

Despite support provided by the General Assembly over the past few years ($2 million in 1985-86 for upgrading faculty salaries, and $21 million in FY 85-86 and $11 million in FY 86-87 for capital construction projects), the Community College System wage scale remains among the lowest in the nation. Funds should be provided to bring community college salaries up to the average in southeastern states.

Changing technology requires continual updating of faculty knowledge and skills. In 1983, a study done by the Board of Science and Technology found that over 65 percent of scientific and technical training items in the Community College System were over five years old, with almost one-third being ten years old. To keep the community college staff current with advances in their respective fields as well as teaching and administrative methods, funds should be provided to meet these equipment needs. An annual equipment appropriation to be increased annually by a multiplier based on costs and new requirements should be considered.

Recommendation 4: The state, in conjunction with support from the private sector, should allocate the necessary resources to address the literacy problem in North Carolina with the goal of a substantial reduction in illiteracy rates by the year 2000.

Action 1: Needs assessment survey, and strategy for implementation

There are over 1.5 million adults in North Carolina without a high school diploma, including the over 800,000 people who are in need of adult basic education. At the present time, educational institutions are not aware of or responsive to the geographic and employment patterns of North Carolinians with these specific needs. A statewide survey that provides better data for program development and evaluation purposes is essential.

Once a survey has been completed, a plan should be developed and implemented to serve those identified by the survey as desiring the training to achieve basic education and/or high school equivalency competencies. Incentives for employers should be considered. Options could include a system of tax credits for employers who provide opportunities for employees to finish high school, or direct financial support to individuals through the provision of child care and transportation subsidies.

Action 2: Statewide clearinghouse/referral/training service

A statewide clearinghouse/referral/training service for all teachers and volunteers involved in literacy efforts should be established. Such a center could serve as a resource to the business community seeking to upgrade the literacy skills of its employees but uncertain of the appropriate form through which to offer such support.

Action 3: Support education of prison population

The General Assembly should consider as a possible condition to parole the completion of basic education courses. As of December 31, 1985, approximately 23 percent of North Carolina's prison population had completed no more than the eighth grade. Over 70 percent had not graduated from high school. Added to the observation that the state's prison population is relatively young (75 percent are between the ages of 21 and 39), the implications are a future revenue drain from an expanding prison resident population. The skill level of the majority of current inmates leaves them few alternatives to a continuing cycle of crime and repeat prison terms.

Action 4: Basic literacy requirement for drivers' licenses

North Carolina ranks high among the states in the proportion of its citizens who are functionally illiterate. Recognizing the growing problem, several public and private studies are underway to define solutions. Illiteracy is a factor that is associated with many social and economic problems, including highway safety. The Highway Safety Research Center at the University of North Carolina at Chapel Hill estimates that almost 14,000 applicants under age 25 take the oral knowledge examination for driver licensing each month, or about 167,000 each year. The use of the oral examination is considered by many experts as an approximate measure of functional illiteracy in the young adult population. Numerous studies have linked low literacy skills with higher crash, as well as violation, rates. The Commission suggests that a linkage between obtaining a first-time drivers license for those under 18 years of age and minimum standards of literacy should be carefully examined by groups studying the long-range effect of illiteracy on North Carolina's citizens.

Recommendation 5: The state, specifically the Job Training Coordinating Council formed under the Job Training Partnership Act, should work toward coordinating available job training funds at the federal, state and local levels, in order to best serve all North Carolina citizens, particularly those experiencing severe economic hardship and those with physical, mental and emotional disabilities.

Action 1: Target public assistance recipients

Many public assistance recipients have not had the opportunity or were not able to develop the basic and technical skills necessary to obtain employment. These citizens represent an important source of labor, and their employment is essential in breaking the "welfare cycle" for succeeding generations -- a factor that becomes more serious with the increase of young, unwed mothers. Special attention should be given to developing model programs for transferring women from welfare dependence to employment.

Action 2: Target displaced workers

North Carolina has a serious worker displacement problem, with 31,075 workers displaced during the years 1978-84 in the textiles industry alone. Left unattended, this situation will become increasingly costly in terms of lost contributions to state revenues, increased demands on the unemployment insurance program, and a greater reliance on social programs such as welfare and food stamps. The critical need of displaced farmers to obtain retraining must be addressed immediately.

Recommendation 6: The General Assembly should work with private industry in providing for employees quality day care services.

The General Assembly has made significant progress toward quality day care. With the number of parents of young children in the work force, the increasing numbers of single parents and women, and the need for retraining, day care services are becoming paramount.

There are approximately 2500 day care centers and day care homes across the state. When one considers that North Carolina leads the nation in the percentage of women in the workforce, it becomes clear the demand for quality day care far outstrips the current supply. The feasibility of providing flexible scheduling, direct payments for child care through a flexible benefit system, or job-sharing should be investigated both within state government and the private sector. That investigation should also consider laws and programs in other states. Specific proposals for increasing and creating new day care programs are urgently needed and should be the subject of General Assembly action as soon as possible.

School-To-Work Transition

Over the next 10 to 15 years, major demographic shifts will cause the North Carolina workforce to undergo significant changes in composition. The total number of youth of working age will decline, but the number of minority youth -- who have typically been least prepared for work -- will increase. The number of high school dropouts will rise, as will the number of teenage mothers. Loss of contributions to the wealth of the economy by youth who are unmotivated or undereducated is clear -- the lifetime income for high school dropouts is 70 percent that of high school graduates without college experience. Resources must be provided in a way that encourages these youth to take training and seek a job -- through a welfare system that does not penalize them for training and working, and by the provision of remedial education and training that is accessible, as well as personal and job counseling.

Strategies to improve entry-level skills of the state's new entrants into the labor force must include well-articulated transitional programs from public school to work, training or further education. National statistics indicate that of the three million young people who graduate every year from high school, at least 16 percent have no plans to attend college or enter a vocational institution. Many school administrators estimate that between 27 and 34 percent of their seniors have no plans for continuing their education.

School-to-work transition programs are intended to help young people better prepare themselves for the world of work. The programs operate in the classroom, in industrial or business settings, or in some combination thereof. Participants are high school-age students who are still enrolled in school as well as those who have dropped out.

In North Carolina, a school-to-work transition program called Job Readiness Training (JRT) is operating in at least 70 high schools throughout the state. Links have been forged with the Job Training Partnership Program, enabling most school systems to secure the funds necessary for these types of initiatives. Developed as a pilot program for North Carolina public schools by MDC, Inc., the content of JRT programs varies between school systems, ranging from short after-school programs to a comprehensive program in one county that combines dropout prevention, job placement, and tryout employment initiatives.

Dropout prevention programs in the North Carolina school system have been addressed by the state's Basic Education Plan. Focused attention to this problem should be maintained at the state level until the state's nearly 30 percent dropout rate has been substantially reduced. School systems in remote rural counties with relatively higher dropout rates will require additional focus, if the problems encountered in rural school systems are to be quickly identified and appropriate local solutions generated.

Initiatives such as the "2 + 2" program, where two years of a core preparatory curriculum in high school are linked to a cluster of technical programs at the community college level, would allow high school students to pursue basic studies that are necessary for later success in major technical courses. A program of joint credit or advanced placement in appropriate vocational programs at community or technical colleges could also be considered to encourage young people to continue their professional training beyond the level of high school.

Smoother transition programs from two-year degree institutions to four-year degree programs at colleges and universities are also necessary. North Carolina's university system must work more closely with the Community College System to ensure students are not expected to duplicate coursework and thereby delay the re-entry into the workforce of highly productive professionals.

The Advisory Study Committee on Vocational Education in North Carolina is conducting a review of the quality and effectiveness of vocational education programs offered through the secondary and post-secondary systems and will develop policy-level recommendations for the overall improvement of vocational and technical education in North Carolina. Their report will be submitted to the General Assembly for review by December 15, 1986.

The expansion and promotion of school-to-work transition and guidance programs that prepare high school students to make the transition from school to jobs, to skills training, or to four-year degree programs is considered critical to North Carolina's future labor force development.

One of the biggest problems facing young people and displaced workers, particularly in rural areas of North Carolina, is the scarcity of good jobs for which they can even apply after leaving school. School-to-work transition programs may lose much of their meaning and potential impact if there are not enough good jobs available to program graduates.

The good news is that virtually every community in North Carolina -- including those lacking job opportunities -- has legitimate economic opportunities that have been overlooked and left untapped. Therefore, it makes sense to begin seriously promoting entrepreneurship education within our public educational institutions. By helping people to see the economic potential of their own communities and then training them to successfully seize these opportunities, entrepreneurship education can be an important tool in promoting economic growth and expanding the labor market.

Recommendation 7: **The state should continue implementation of the State Basic Education Program to ensure that every person has the opportunity to learn basic academic and vocational skills, and to ensure that every teacher is given ample opportunity for career enhancement and professional development.**

Recommendation 8: **The state should continue its dropout prevention initiative according to the schedule of implementation of the Basic Education Program.**

There are many programs in the public schools that seek to reduce our state's high dropout rates -- for example, the Extended Day School Program, the Dropout Prevention/Job Placement Center, and the Model Dropout Prevention Coordination Program. The state should adopt effective coordination programs and extend them to all school systems. Outstanding performance by a school system in the reduction of dropout rates could be formally recognized by the State Board of Education.

Recommendation 9: Public schools and the community colleges should be mandated to work together to ensure that students who drop out of public schools are referred to the community college system or other appropriate service organizations.

Recommendation 10: The state should expand the Job Readiness Training Program and other successful school-to-work transition and guidance programs piloted in North Carolina in recent years.

The Job Readiness Training Program, funded with monies from the Job Training Partnership Act and vocational education programs, was recommended by the NC 2000 Commission and incorporated into the report of the NC Commission on Education for Economic Growth.

Recommendation 11: The "2 plus 2" model that prepares high school students for post-secondary technical programs, and ultimately for post-secondary advanced technical careers, should be initiated across the state.

High school courses that lay a strong foundation for technical studies would give general track students an opportunity to explore technical careers. Such a program might help them avoid the often frustrating experience of entering the labor force right after graduation, only to find that more training is necessary to reach their career goals. It would also enable students to avoid time-consuming prerequisites when they decide to enter a technical program. Specific community college system staff should be designated for carrying out the program. Attention should also be given to ease the transition from community colleges to four-year institutions.

Recommendation 12: The State Board of Education should make entrepreneurship education a priority and expand the range of opportunities and resources available to students across the state interested in this area. (See Recommendation 2, Action 1 in the section on Jobs Development)

There are only a few efforts in place that encourage student interest in entrepreneurship and promote a clear understanding of the role of small business in the economy. Exploratory programs at the elementary and middle school levels should be continued and upgraded. Entrepreneurship courses and related action projects should become a more common element of the curriculum in North Carolina's high schools.

Traditional, urban-oriented high school programs -- such as Junior Achievement -- merit continued support. Newer, rural-oriented models -- such as the school-based enterprise program jointly sponsored by the N.C. Small Business and Technology Development Center and N.C. REAL Enterprises -- should also be fully explored and developed for widespread implementation within in the next few years.

Recommendation 13: The State Board of Education should continue to identify and address education problems in rural areas.

A conference on the effect of the Basic Education Program on small rural schools was conducted at the Rural Education Institute of East Carolina University. The conference identified several special problems of rural schools: the difficulty of attracting high quality personnel, the need to improve existing facilities and to build new facilities required to meet both current and expanded needs, and the inability of isolated rural districts to pay for certain aspects of the program.

State/Local/Private Partnerships

In the formulation of strategies, business and government must work together: a) to instill awareness in the current and future workforce that education and training are lifelong processes vital to their working lives, and b) to ensure the most efficient use of state and private training resources. The private sector must be encouraged to play a stronger role in any state initiatives whose major objective is development of the state's labor force.

The State of North Carolina should continue to develop a supportive climate for the formation of lasting public/private partnerships between individual businesses and local schools. Public policy should serve as a catalyst for initiatives that forge new combinations of private sector training efforts with public programs.

A first step could be the development of an information base concerning public/private partnerships that have been successful in North Carolina and in other states at addressing specific needs. The business community must have access to resources that will enable them to choose effective means of investment in their future labor force, to identify opportunities for collective business participation in education enhancement programs in local communities, and to formalize appropriate mechanisms that encourage cooperation between business and education along guidelines acceptable to local participants. Partnerships in education serve to combine the resources of business and education, thereby improving the quality of life and further increasing the attractiveness of the community to other businesses and industrial firms.

Recommendation 14: The Board of Education, Board of Community Colleges and the UNC Board of Governors should recognize exemplary public/private partnerships for their importance to the future development of the state labor force. Information concerning efficient and effective partnerships should be gathered and disseminated throughout the respective systems to provide all schools with the background necessary to form similar partnerships at the local level.

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Natural Resources And Public Facilities For Economic Development

North Carolina's population growth of nearly 700,000 in the decade of the 1970s made North Carolina the 10th most populous state in the nation in 1980. Fifty-two percent of the state's 5,880,000 citizens lived in municipal areas, with many more located just outside the cities and towns. This special character -- a dispersed population with over 500 towns and cities and none making up more than 7 percent of the state's population -- has long been recognized as a key part of the quality of life in our state. We must strive to maintain the special character of North Carolina as we seek continued economic growth.

Over the past few years, the state's population has grown to over 6,300,000. We have witnessed growth in income and continued low unemployment rates, but this population growth has increased the demands on our natural resources and public services. Urban areas, along with retirement and recreation areas, have been faced with unprecedented growth, while rural areas have experienced growth and even declines.

The rapid growth of the state's metropolitan areas, combined with declining federal support for community and economic development, have placed tremendous pressures on state and local governments to respond to service demands and the need to protect environmental quality. There has also been a growing concern over the changing character of many of the state's urban areas. Terms such as "growth choke" (major traffic jams throughout the day) and "urban sprawl" are now a growing part of North Carolina's urban lifestyle.

Rural areas are facing substantial reductions in federal funding and, at the same time, they are experiencing slower growth -- which limits local financing abilities. This lack of local financing ability is being compounded by the recent decline in agriculture. Serving existing residents and encouraging new or sustained economic growth are important issues for rural communities.

The future well-being of our citizens and our potential for economic growth depend on meeting the challenges facing both our urban and rural areas. Meeting public facility needs -- such as transportation services, education, water supply, wastewater treatment, hospitals, and solid waste disposal -- while protecting our environment and preserving our natural areas is critical to our future. Establishing goals, adopting strategies and financing these services are essential.

North Carolina is in a good position to address these needs. Our history of addressing growth issues has been one of state and local government partnership. The current partnership has emerged over time and is one that not only recognizes the roles but also the strengths of each partner. Prior to 1970, the state was focused primarily on state service provision and undertook functional planning in such areas as transportation and education. Responsibility for local services provision and urban service planning was turned over to local governments. The state provided enabling legislation as well as financial and technical assistance, while local governments proceeded at varying rates in planning and developing their public services.

Efforts to deal with growth encouraged even greater shared responsibility in the 1970s. In 1972, the state adopted the Statewide Development Policy aimed at coordinating state development with local development. Seventeen uniform planning regions were established to coordinate local and state planning throughout the state.

Coordination efforts were significantly expanded in 1974 with the adoption of the Coastal Area Management Act (CAMA). Born out of a commitment to protect the environmental quality of life for our twenty coastal counties, the Coastal Area Management Act provided for a true partnership between the state, the local governments and the citizens of the area. Implementation at the state level was through the Coastal Resources Commission, backed up by an advisory body with a firm commitment to shared responsibility with local government and their residents. One-half the funding went into seeking citizen input into local plans. Many observers attribute the success of CAMA to the extensive citizen involvement and the local government leadership provided for implementation of the Act. Over the past twelve years, the Coastal Area Management Act has become a national model for coastal area development planning and, more importantly, it has provided a proven model for how state-local-private partnerships can work in North Carolina.

1974 was also the year the North Carolina Land Policy Act was adopted. The act established the Land Policy Council which developed recommendations on a statewide land classification system, identification of critical natural areas, and a land use information system. While the land classification system was adopted by the Coastal Area Management Act, the other recommendations were not and the Land Policy Council and its advisory bodies were subsequently disbanded.

The Mountain Ridge Protection Act of 1983 was a direct response to high-rise construction on mountain ridges. State legislation provided for local ordinance adoption, backed up by state technical assistance. These fragile areas are now protected by local ordinances based on local government action.

Since 1983, predevelopment ordinances have been growing in popularity as local governments with state enabling legislation are moving to address growth in their area.

The partnership between our state government, local governments and the private sector is a great asset to future economic development. However, as we address natural resources and public facilities issues, new challenges will require even greater joint efforts. As we seek continued economic development, we need to be taking both long and short term actions. In the long term, we need to address how the state and local governments will cooperatively deal with growth. Successful efforts to deal with growth will depend on involving our citizens and business community in both state and local initiatives.

Recommendation 1: The General Assembly should create a legislative study commission on Regional Growth Trends and Development Issues.

Numerous states have developed statewide growth strategies. The acknowledged leader is Florida, which has developed a comprehensive statewide growth management system. Other states, such as Tennessee, Kentucky and Georgia have focused on regional planning with subsequent capital investments as their approach to supporting growth. A legislative study commission could undertake a review of other states' efforts and determine what type of system would be best for North Carolina. Key issues that need to be addressed include:

(a) the need for a growth management system in North Carolina;

(b) the need for an official set of planning data across the state;

(c) the funding options for long-term support of growth;

(d) a review of state and local programs affecting growth;

(e) a review and analysis of environmental protection legislation;

(f) the need for encouraging regional strategies for growth;

(g) the alternatives for developing action plans, including appropriate incentives and funding mechanisms;

(h) close coordination with city and county governments; and

(i) local citizen involvement in the planning process.

Public Facilities for Economic Growth

North Carolina's population is expected to exceed seven million by the year 2000. To provide public services to our citizens and the business community, an estimated $25 billion in public investments will be needed.

Daily we are confronted with information on shortfalls in estimated revenues for meeting these demands. For state and local governments addressing public service needs, a dilemma arises as each service is discussed. A systematic means for determining the actual needs, the priority for meeting those needs, and the alternatives for financing those needs are currently not available. State government public service facility planning is not being undertaken in a comprehensive manner.

Recommendation 2: The Department of Administration should develop a state public service facility plan that identifies public facility needs for a ten-year period with priorities established for biennium funding keyed to the ten-year plan.

Currently, the Department of Transportation undertakes a comprehensive capital planning process that involves the public agencies and local governments. Such a planning process is needed for other state agencies to provide a focus for capital investments by state government.

Recommendation 3: The General Assembly should establish a Local Public Facilities for Economic Development program.

The vast majority -- over 80 counties and over 80 percent of the towns -- of local governments lack public service facility plans. Local governments are making decisions daily on investments in public facilities without the benefit of comprehensive plans and with limited involvement from their citizens and business communities in these critical investments.

A Local Public Facilities for Economic Development program would establish a state support program for local government public facilities planning. By adoption, the state and local governments would embark on a consistent planning process that would provide accurate data on needs, the basis for cooperative plans on location and type of facilities, and potentially shared programs for meeting these needs.

Most importantly, these local plans developed with input from citizens and the business community would provide a framework for dealing with the full set of public facility needs. Local financing proposals from current revenue, through tax increases or borrowing, would be based on hard information.

Water and Wastewater

At the top of the current agenda are four critical areas for serving our citizens and sustaining our economic growth: transportation, water, wastewater treatment, and education. These four areas have been estimated to be $10 billion short of needed revenues for achieving desired levels of service.

The 1986 session of the General Assembly enacted a transportation financing plan with implementation already under way. The 1986 session also passed enabling legislation for an additional 1/2 cent local option sales tax, with the requirement that funds be earmarked for school facilities at the county level and for water or sewer systems at the municipal level.

While overall infrastructure needs span areas ranging from state facilities to support for water and sewer systems, the consensus among economic development officials is that water and sewer systems are the life lines for future economic growth.

Unmet water and wastewater treatment needs are currently estimated at over $2.5 billion to meet the improvements and expansion called for by the year 2000.

Historically, the provision of water and wastewater services has been the responsibility of local governments. Over the past twenty years, with the adoption of national and state standards, recognition of the economic impact of these services and the public health protection requirements have led to a full local, state and federal partnership in meeting these basic needs.

The 1972 Federal Clean Water Act established national standards for water quality. Included in the act is a target date of July 1, 1988 for bringing all municipal wastewater systems into compliance, or having in place a municipal plan for reaching compliance including a financing plan.

Over 100 municipal systems and nearly 90 industrial sources in North Carolina are currently on moratoria and can add neither residential nor commercial customers to their system. These cities are joined by numerous others across the state in facing the burden of financing their wastewater treatment needs. The "financial crisis" has its roots in the growth of demand and lack of capital planning at the local government level.

Federal funding for North Carolina wastewater treatment began with major financing in the early 1970s and peaked at $110 million in 1976. These funds were allocated to municipal systems on a 75 percent federal share basis. State government joined in support of these investments by providing up to 12.5 percent of the total cost of a project by way of bond proceeds from 1972 and 1977 bond programs. As a result, local governments were getting as much as 87.5 percent of the cost of their wastewater facilities financed by their state and federal partners.

In 1984, the financing crisis began to take shape as the federal government reduced its share from 75 percent to 55 percent and eliminated all growth supporting contributions. As a consequence, the federal share is now effectively 40 percent of the cost of facilities.

The state bond proceeds were used up and two state actions have been forthcoming. First, in 1983, state legislation allowing an additional 1/2 cent local option sales tax was passed, calling for the earmarking of 40 percent of the revenue for water and wastewater in the first five years and 30 percent in the second five years after local adoption.

Second, in 1985, the state appropriated $120 million for water and wastewater grants to local governments allocated on a per capita basis. Earlier funding from bond proceeds had been allocated through a ranking system that provided state funds on the basis of criteria for meeting clean water program goals and the total cost of projects. Larger systems and others with greater impact on water quality received 12.5 percent funding from state resources. A small portion of the funds were reserved based on population.

In the 1986 session, the General Assembly passed enabling legislation to allow local governments to increase their local option sales tax by 1/2 cent. Funds generated by this action will have the same targeting feature as the legislation passed in 1983.

In addition to the federal EPA's state-local program, other federal-state-local programs have emerged in support of economic development. Recognizing the requirement of wastewater treatment systems for new businesses, action programs were initiated. These programs were targeted primarily to low income areas and predicated on plans for supporting the creation or retention of jobs. These programs included the Appalachian Regional Commission, the Coastal Plains Regional Commission, the Economic Development Administration, the Community Development Block Grant Program, the Farmers Home Administration, and others. Funding for these programs went as high as 90 percent of project costs. In the 1970s, funding for jobs development averaged $12 million a year.

Meeting the wastewater treatment and water needs of residents and local economies is essential. It is also clear the federal government is withdrawing its financial support -- while keeping its federal Clean Water mandates -- as noted earlier. Further complicating the issue is the uncertainty of tax exempt status for local bonds. In short, the financing crisis for water and wastewater treatment facilities is clouded by uncertainty at the federal level.

Recommendation 4: **The state should establish a Clean Water Grant and Loan Program.**

At present, the state is assisting local governments in meeting their water and sewer needs by way of enabling legislation on local sales taxes and the $60 million per year allocated on a per capita basis.

A new way of assisting local governments that emphasizes need would be to change the state program to a grant and loan program. Loans and grants would be available to local governments to augment federal funds and their locally generated funds.

The basic idea would be for the state to make loans and to supplement those loans with grants. The grants would be based on limiting user fees for supporting projects to no more than 1.5 percent of median family income. Special attention should be given to our rural areas where costs of facilities are more likely to be out of reach financially.

Recommendation 5: **The Department of Natural Resources and Community Development should work with the League of Municipalities and the regional councils of local government to hold workshops to notify local governments of the July 1, 1988 deadline for either providing a municipal plan for compliance or compliance with the Federal Clean Water Act.**

Natural Resource Industries

North Carolina's abundant natural resources have fueled our economic growth from colonial times to the present and will continue to do so. Our state's 76,000 farms, 250,000 woodlot owners, the mineral owners, and the 30,000 fishermen are all directly dependent upon the natural resources, as are many of our businesses that either supply those industries or use their products. Enhancing our natural resource industries is critical to the long term development of our state.

The remainder of this committee's report is limited to recommendations on forestry and fisheries. This limitation is based on two decisions. First, the committee is working with the Jobs Development Committee to address the need for a major long-term state commitment to rural economic development. Secondly, the committee, after being briefed on the work of the Special Legislative Committee on Agriculture, concluded they should focus their attention in this area to avoid duplication.

Forestry

Foresty-based manufacturing is our state's second leading industry, with products valued at over eight billion dollars annually.

Throughout North Carolina's history, our forests have been recognized as both a critical part of our quality of life and the source of a major industry. The fact that two of every three acres in North Carolina are covered with trees illustrates the importance that forests play in our economic and social well-being. The significance of forests as a state resource can be summarized in the following points:

- North Carolina has almost twenty million acres of commercial forests valued at over $6.4 billion (1982 prices).
- Eighty percent of the state's forests are owned by private individuals, the vast majority of whom own less than 100 acres.
- During 1982, over 1.4 billion board feet of timber were harvested.

The impact of forest-based industries on our state's economy can be summed up as follows:

- 136,000 North Carolinians were employed in forestry-related industry with a combined payroll of $1.5 billion.

- Products harvested annually from North Carolina forests bring forest landowners more than $163 million. These products are worth more than $323 million when they are delivered to manufacturing plants.

The economic aspects of forestry are important, but they take second place in comparison to the social and environmental value of our forests. Forests are critical to our water and air supply. For these reasons and others, we need to protect our forests and manage them in such a way as to enhance their environmental and economic contribution to our state.

Growing trees and managing forests are long-term propositions, since trees planted today will not be ready for harvest until some thirty to fifty years hence. Short-term needs work against this long-term issue. While landowners reforested some 58,000 acres in 1982, 45% of the small woodlot acres harvested in our state were not replaced with productive new forests. In fact, it is felt that our state's forests are growing at approximately one-half their potential.

Recognizing the significance of the industry, the vital role it provides for many of our labor force, and the long-term nature of the industry, a major planning effort was undertaken between 1982 and 1985 by over 100 participants from all regions of the state. This effort culminated with a long-range comprehensive plan entitled Pathways for Forestry. The participants in that planning process agreed that an oversight body for carrying out the plan was most critical for the future of forestry. Some of the problems and goals have been addressed over the past year and a half; however, the oversight body and several other recommendations have not been addressed.

Recommendation 6: The General Assembly should enact legislation to establish a North Carolina Forestry Commission.

At present, there is a North Carolina Forestry Advisory Council; however, the need exists to create a commission whose duties would include:

- oversight for a continuing planning process;
- development of support from individuals and forest organizations to accomplish the long-range goals of forestry;
- monitoring of the progress being made in achieving goals and report to each biennial session of the General Assembly.

Recommendation 7: The Division of Forestry in the Department of Natural Resources and Community Development should initiate efforts to expand the use of low-grade wood fiber.

Such a market development program would: (1) develop, maintain and provide forest-based industries with information for plant location and expansion, (2) support wood products industry recruitment and expansion, (3) promote increased use of North Carolina hardwood in the state furniture industry, (4) promote increased export of forest products, and (5) promote the use of low-quality wood and residue as a state energy source.

Recommendation 8: Emphasis on forestry education through the state forests and forestry extension personnel should be expanded.

State forests and forestry extension personnel would provide a strong base for research and outreach to the state forest landowners. Since nearly 250,000 people own this resources, outreach to encourage good management practices -- including reforestation, insect control, and multiple use -- are essential to maximum long-range production. Educating farmers on state and federal support is also important. One example, is the state-funded forest development program that helped regenerate an additional 20,000 acres per year.

Recommendation 9: The State Forester should pursue development of a Voluntary Training and Certification Program for logging operators as a means of preventing and reducing environmental damage during harvesting.

Fisheries

North Carolina's 2,300,000 acres of estuarine resources rank it number one of the East Coast states and third nationally, behind Alaska and Louisiana. In fact, North Carolina has 50 percent of the mid-Atlantic estuarine acreage. 408,000 acres are designated prime marshlands and support a wide variety of finfish and shellfish. North Carolina is fortunate to have both cold and warm water fisheries; areas north of Hatteras support colder water varieties of fish and areas south support warmer water varieties.

In 1984, the total landing of fisheries was 277.2 million pounds with a dockside value of $57.3 million. These figures were down from the 370 million pounds in 1983. The economic impact of fisheries goes far beyond the 26,000 full and part-time fishermen when one considers that tourism expenditures in the 20 coastal counties of over $577 million annually are greatly related to the fishing industry. In 1984, there were 106 processing plants along the coast, in addition to the $7 million Wanchese Seafood Park and a $2 million Surimi plant in Raleigh with $4 million expansion plans.

For the ten recently added processing plants, approximately 430 new jobs have been added in the coastal area. State support for the fisheries industry is through several programs including:

- the fisheries market development program of the Department of Agriculture;
- the North Carolina Sea Grant Program of the University of North Carolina which provides research and technical assistance to fishermen in areas ranging from coastal engineering to marketing;
- the Agriculture Extension Service that brings applied research to fishermen.

While these and other efforts are underway and are having a marked impact on the fisheries industry, several problems have been identified. In recent public hearings, the top three problems discussed were (1) degeneration of water quality and habitat; (2) continued increase in fishing pressure; and (3) decreased open fishing water caused by pollution.

Additional concerns raised by the Commercial Fishing Association were the lack of start-up capital or growth capital for small processing plants, and the need for market development assistance. Addressing these concerns in the context of long-term benefits for the industry is now essential according to representatives from the industry.

Recommendation 10: There should be an expansion of the fisheries market development program of the Department of Agriculture in cooperation with the Marine Advisory Service of the Sea Grant Program.

The recent successes with Surimi point to the returns associated with this type of effort. Current research should be expanded as new markets are determined.

Recommendation 11: Support should be given to expansion of existing fisheries processing plants and recruitment of new plants.

Recent successes in supporting new processing plants and expansion resulted in over twenty new or expanded processing plant operations. These results were with limited support from state assistance programs.

Recommendation 12: Business assistance should be provided to fishermen and fish processing businessmen.

The Department of Community Colleges is developing small business training centers on selected campuses. Those campuses in coastal areas should be encouraged to focus assistance on the fishermen and processing plants. The UNC System's Small Business and Technology Development Centers are also encouraged to target assistance toward the fishing industry.

Recommendation 13: The fishing industry of North Carolina should pursue the development of a long-range plan with implementation proposals for the fisheries industry.

The long-range plan could begin with a thorough economic analysis of the industry (improve current data), coordinate the development of action plans, and build consensus in support of action plans.

Jobs Development

By the year 2000, nearly 3.7 million people will make up North Carolina's work force. This is an increase of over 570,000 people in the next fifteen years. Job creation strategies and their efficiency in supplying new jobs that match the characteristics of the current and future labor force are critical to the future economic development of the state.

Which sectors of our state economy are the most dynamic generators of new jobs? Statistics compiled by the North Carolina Department of Commerce show that:

- small businesses (those employing under 100 workers) account for 97 percent of the 114,124 firms in the state;
- these small businesses account for nearly 45 percent of all jobs;
- of the new manufacturing industries announced for the second quarter of 1986, 60 percent are small businesses employing less than 100 people;
- services, retail trade, and construction account for 71 percent of all small business firms and 62 percent of small business employees;
- in 1985, the service sector in North Carolina provided 24,100 new jobs, followed by retail trade with 15,100 and construction with 11,000 new jobs;
- very small businesses (employing under 20 workers) account for 86 percent of firms in the state and employ approximately 20 percent of those currently working.

While there is a larger number of very small businesses in metropolitan counties, there is a higher percentage of workers in these businesses in rural adjacent counties. In the average metropolitan county, very small businesses account for 21 percent of the county's workers. In the average rural county, they account for 34 percent of all workers.

For the past twenty years, North Carolina's economic development policies have centered upon industrial recruitment as the most effective strategy to achieve economic growth. The industrial recruitment strategy developed by the North Carolina Department of Commerce has been copied by many other states as a model program. In 1984, Industrial Development magazine reported that North Carolina led the nation in attracting new plants.

In 1978, under Governor Jim Hunt, the recruitment of high-technology and related industries assumed major importance, and a series of high-tech initiatives was developed in rapid succession:

- in 1980, the Microelectronics Center of North Carolina was established;

- in 1981, the North Carolina Biotechnology Center was created;
- and in 1983, the N.C, Technological Development Authority became operational.

Between 1983 and 1984, North Carolina moved from 15th to 13th nationwide in high-tech employment, going from 47,000 to 55,000 jobs.

The wisdom of relying on industrial recruitment as the sole or primary tool for state economic development is now in doubt. Fewer and fewer manufacturing plants considering relocation; the estimate is about 1400 plants (an average of 28 per state) locate each year. An increasing proportion of recruited industrial firms prefer to locate within metropolitan areas in order to access university and other state-supported research facilities, a factor that has contributed to wide dispersions in growth rates between urban and rural areas throughout the Southeast. Competition among all states for new firms has intensified, the growth of manufacturing has slowed, and national employment growth has depended increasingly on small new businesses and service firms.

An evaluation of the state's industrial recruitment efforts is difficult because the attributable benefits are unclear. Two separate studies of the North Carolina Department of Commerce's accounting procedures discovered that, for the 1971-80 time period, only 47-52 percent of the announced new jobs for new and expanding industries actually materialized. Additionally, actual new investment expenditures were only about two-thirds to three-quarters of the announced figures. The consistent overestimation of the main indicators used by state agencies to evaluate state economic progress implies that the growth rate of the state's economy has been generally overstated.

There is no single indicator that provides an unambiguous measure of a state's economic performance. Each state must develop a set that best fits its particular economic structure and program needs. It is also important to generate data on various regions of the state and individual counties.

Recommendation 1: The N.C. Department of Commerce should use indicators of economic progress that include measures of growth in per capita income, rate of new business formation and failures, growth rate of the number of self-employed, and the performance of primary and secondary schools.

The time has come for a new effort for economic progress in the state of North Carolina. Structural changes in the economy demand new perspectives in the formulation of our state's economic development policies. In the past, our state's industrial recruitment programs have become models that were copied by other states. We are proud of this achievement, but at the same time we realize that responsible leadership dictates we must reorient our thinking. Our industrial recruitment programs must now be complemented with new programs that permit North Carolina business and industry to adapt to changes in the national and international economies with a minimum of adjustment costs.

We propose a "growth-from-within" strategy as the primary focus of our future economic development efforts. A successful growth-from-within job creation strategy which will enable our state's business community to meet the challenges of a changing economy. It will also complement industrial recruitment programs with a commitment to improve state support for existing businesses and a new commitment to develop an effective support system for new, home-grown industries. Thus, a state jobs development strategy that more accurately reflects the changes occurring in our state economy would add to present industrial recruitment efforts.

The larger cities of our state are providing jobs for not only their residents, but for many people in surrounding areas. These larger cities are major economic generators for North Carolina and the "growth-from-within" strategy depends greatly on their continued healthy growth. These cities are embarking on comprehensive economic development strategies that call for state cooperation.

A "growth-from-within" strategy would build on our good urban growth trends and also seek to ameliorate the declining economic conditions now found in most rural counties in North Carolina. A study conducted by the Southern Growth Policies Board found that neither population nor net employment are growing at as fast a rate in rural areas as in the urban areas of the state. A third initiative, support for rural areas, would focus on the set of incentives necessary to accelerate growth within North Carolina's several distinct rural regions.

Support for Small Business Development

Small businesses are a rapidly growing sector of the national and state economy. Between 1980 and 1982, approximately one million net new jobs were created in the United States. Businesses with fewer than 20 employees actually created 2.6 million new jobs, while those with more than 100 employees lost 1.7 million jobs. In addition to job creation, a study by the National Science Foundation discovered that small businesses produced about 24 times as many innovations per research dollar spent as large firms. In North Carolina, small businesses account for 97 percent of all business firms and 45 percent of all jobs in the private sector.

An estimated 65 to 85 percent of small businesses fail in their first two years, fewer than three in ten surviving to be passed on to a new generation of owners. Numerous studies have documented that small business failures are the result of a lack of one or both of two key ingredients to success--good management or the know-how to start or expand a small business, and sufficient capital for start-ups and expansions.

In North Carolina, small businesses are assisted by numerous agencies within state government and the university system, in addition to the private sector. For example:

- Within the Department of Commerce, in 1985 the Small Business Development Division (SBDD) was created to strengthen small business assistance and minority business development efforts. In addition to handling individual inquiries and counseling requests, the SBDD has initiated a program of Buyers/Suppliers Exchanges which provides vendor access to major company purchasing agents.

- The Governor's Small Business Council, made of up business community representatives, meets regularly to assess state small business development activities and reports directly to the Governor with recommendations for the improved delivery of services.

- The North Carolina Technological Development Authority (TDA) is also housed within the Department of Commerce. The TDA awarded grants totaling $800,000 in fiscal years 1984 and 1985 for the establishment of four incubator facilities. The TDA also became a contact agency for small companies interested in making proposals to the federal Small Business Innovation Research (SBIR) program. The Innovation Research Fund (IRF) of the TDA provides royalty financing of up to $50,000 for North Carolina small businesses for research leading to the development of new or improved products, processes or services.

- The community college system has funded 34 small business centers around the state. These network centers offer training, information and advice to small business owners and managers.

- The University of North Carolina System has funded eight Small Business and Technology Development Centers (SBTDC) around the state. Their task is to provide assistance in the start-up, expansion, and successful operation of small businesses, and to facilitate successful technology transfer from universities to small businesses.

Current state initiatives to help small businesses focus primarily on providing small business operators with managerial assistance and advice. Direct financial assistance has been limited to the functions of the Technological Development Authority.

There is already in place an extensive, diversified network of small business assistance programs at the state level staffed by people with a commitment to quality service delivery. Unfortunately, the present lack of communication and coordination among agencies permits duplication of services and an inefficient usage of state funds allocated to small business assistance programs. A more streamlined and comprehensive statewide assistance program can be developed through a consensus among all state agencies who serve small businesses so that the needs of the small businessperson come before the needs of any particular agency.

Many vocational training programs and school-to-work transition efforts place their fundamental emphasis on producing ever-better job applicants. However, given both the scarcity of available good jobs (especially in rural communities) and the growing importance of the small business sector, there also should be a new emphasis on entrepreneurship education at both the secondary and post-secondary levels. There is a serious need for people across North Carolina who have been given the exposure, encouragement, education and experience necessary to become job creators -- through self-employment, small business development and entrepreneurship.

Recommendation 2: The state should strengthen and coordinate support for small business development.

At the present time, services to small business owners are dispersed among several agencies. The most appropriate roles for state government agencies, community colleges, and state universities in state small business development assistance should be defined. Effective methods of private sector support should be identified and encouraged. Unjustifiable duplication of mandates and efforts should be eliminated, while new initiatives might be considered to meet important unmet needs for assistance.

Action 1: The public schools, community colleges and university system should place increasing emphasis on entrepreneurship education.

The small business sector is vital to the continued strength of the state's economy. The strategy of "growth from within" is dependent upon the cultivation of entrepreneurial talent and leadership across North Carolina. From curricula exposing elementary school students to the nature of business to university programs designed to train and assist small business operators, the education system at all levels should actively encourage an entrepreneurial spirit and create opportunities for students, staff and community members to translate this spirit into productive activities. The rural school-based enterprise program currently being piloted by five easter North Carolina high schools in cooperation with the NC Small Business and Technology Development Center, NC REAL Enterprises and other representatives of the private sector is the kind of initiative that should be studied and monitored for possible institutionalization.

Action 2: Establishment of a one-stop permitting program

Eleven other states have already established one-stop permitting centers. Currently, over 400 types of licenses and permits are administered by the state of North Carolina. Placing licensing information and procedures in one location -- with specific time limitation guidelines for agency processing -- would reduce the start-up cost of business formation by easing the paperwork burden on new business owners. It should also increase state efficiency when duplicative job responsibilities in two or more agencies are consolidated.

A legislative committee -- the Simplified Business Permits Study Commission -- is presently studying ways to pursue a one-stop permitting process in our state. Their recommendations are being developed with excellent staff work and should provide a basis for action.

The Commission recommends the establishment in North Carolina of a one-stop permitting program, with the details of such a program to be developed by the Simplified Business Permits Study Commission.

Action 3: Support for small business assistance

The network of Small Business Training Centers, presently operating at 34 of the state's community colleges, and the system of Small Business and Technology Development Centers (SBTDCs) within the state university system should be designed to insure statewide coverage of quality service delivery to the state's small business community.

Cost effectiveness and the maximum utilization of existing community resources as foundations for further growth and development should be primary considerations in the completion of these two systems.

The N.C. Department of Commerce should take the lead in developing a complete inventory of state-supported and other sponsors of small business assistance. This inventory can be used to improve current efforts to refer businesspersons to the most appropriate sources of expertise and to facilitate improved coordination among service providers.

The N.C. Department of Commerce should also take the lead in analyzing the effectiveness and utilization of state-supported small business assistance programs in order to suggest ways in which they could be improved, unnecessary duplication can be eliminated, and important unmet needs addressed.

Action 4: Coordination by the Department of Commerce, local governments, local chambers of commerce, committees and other economic development officials in the dissemination of information on small business assistance.

State-supported small business assistance programs cannot be successful if public awareness of program objectives is minimal. State and local agencies and organizations with economic development goals and responsibilities can increase their effectiveness within the business sector by incorporating an outreach/extension effort for educating local business owners on available small business development assistance into already existing programs.

Recommendation 3: The state should establish financing programs that will address the start-up, expansion and/or working capital needs of businesses.

Small businesses have identified loans as a critical need for their development. Successful small business loan programs in the Neuse River Council of Governments and Southwestern Economic Development and Planning Commission have documented the success of such investments. Rocky Mount has recently established a small business loan program to meet area small business needs for capital

The Enterprise Zones and Venture Capital Study Commission is currently studying economic development finance in North Carolina and will recommend alternative strategies in their final report. Appropriate financing strategies must be predicated upon our state's unique economic strengths and the enhancement of the effectiveness of local capital markets to support their growth. This legislative study commission has undertaken an in-depth investigation of the present and future capital needs of the North Carolina business community.

The Commission on Jobs and Economic Growth recommends continued funding support for the Innovation Research Fund of the N.C. Technological Development Authority. The Commission also recommends that the state establish other innovative financing programs that address a variety of business financing needs, and that the Enterprise Zones and Venture Capital Study Commission determine the most effective means for these types of financing.

Recommendation 4: The State Treasurer should work with the Department of Commerce and the North Carolina Association of County Commissioners to investigate the feasibility of issuing umbrella industrial revenue bonds in North Carolina.

An umbrella or composite bond is a single issue of tax-exempt industrial revenue bonds providing loan funds for several individual business projects. Many small businesses needing start-up or growth capital are seeking an amount too small to qualify for an individual industrial revenue bond (IRB). The costs associated with a typical IRB issue (printing of bonds, lawyers' fee, underwriting, etc.) must be paid by the company and are usually included on top of principal and interest as an added cost of borrowing. On a loan not greater than several thousand dollars, these indirect costs make the overall cost of borrowing too high for small companies. By combining several small loan requests into one composite bond issue, costs are shared by all applicants, reducing the cost of borrowing to each one.

In most states, umbrella programs are administered either by the state financing authority in conjunction with other IRB programs or by a state small business financing agency. The state of North Carolina is not authorized to issue industrial revenue bonds, only counties. Therefore, the state in conjunction with county governments needs to jointly address this financing option.

Support for Existing Industries

Beginning in 1979, N. C. Department of Commerce data showed a pronounced shift of investment from new plants to expansions of existing industries. For the three years previous to 1979, investment by new industry figures had exceeded those of expansion by existing industry. But by 1980, only one-third of announced industries were new industries; the other two-thirds were expansions. This trend has continued. During the first six months of 1985, existing industry expansion announcements accounted for 83 percent of total business investment.

Over 30 percent of North Carolina's workforce is employed in the manufacturing sector. In 1985, the state's manufacturing industries accounted for 34.4 percent of the Gross State Product (GSP), and this is growing at a rate faster than the national average. But only 33 percent of the state's value added by manufacturing comes from technology-intensive industries compared to a national average of 53 percent. However, during the last decade, technology- intensive industries accounted for most of the gains in manufacturing employment in North Carolina.

The state university system is a major component of North Carolina's network of support for existing businesses. Examples of university/industry cooperation fall into two categories: 1) cooperation for research purposes, and 2) university outreach programs that provide technical assistance to industry.

Around the country, the two most prevalent methods of state sponsorship for research are: 1) university-affiliated technology research centers, and 2) applied research project grants.

North Carolina State University's Center for Communications and Signal Processing is part of a National Science Foundation (NSF) network of twelve cooperative research centers across the country. These centers are intended as permanent vehicles for cooperative research funded solely by industry contributions. The Center is now self-supporting with an annual budget of approximately $2 million. Industrial firms are providing funds for research and graduate student training, in return for which the Center provides in-depth consulting and development studies for the affiliated industries.

State-funded initiatives in research and development have concentrated on the strengthening of research activities in microelectronics and biotechnology. State investments in related facilities on university campuses has exceeded $20 million. The state has also set up independent research centers in microelectronics and biotechnology in the Research Triangle Park to coordinate and promote research in these technologies within the state.

The microelectronics effort is centered around the Microelectronics Center for North Carolina (MCNC). MCNC both operates its own applied research facilities and works with five participating universities and the Research Triangle Institute to support their educational and/or basic research programs. MCNC has received a total of $74.7 million in state funds since 1981 and, through FY 85, $7.7 million from non-state sources.

The North Carolina Biotechnology Center, established in 1981, promotes the development of new and existing biotechnology firms, provides seed grants for university research, and provides support for university education and research in much the same way as the MCNC. The Biotechnology Center differs in that it has no in-house research capabilities, and its funding level to date has been $8.7 million.

According to a National Governors Association report, the main advantages to the establishment of university affiliated technology research centers are the following:

- improved research productivity
- increased capacity for broad-based approaches to solving complex problems using state resources
- the enhancement of scientific and engineering at state universities.

The 1985 report concludes it is unlikely the establishment of such technology centers will immediately lead to tangible products of technological innovation for participating firms; this can only be achieved over time. A program of applied research project grants is more likely to have an immediate, short-run effect on the expansion and stabilization of existing industry, especially small, technology-based firms.

There is, in North Carolina, no program that could be described as an applied research project grant program. Establishing a program with this thrust would prove to be a valuable addition to present efforts, especially if the technology transfer aspects were emphasized.

A study conducted at Duke University examined the long-term performance of various industries, evaluating several different economic indicators. They found that technological innovation is very important in all the dimensions considered. R&D-intensive industries are associated with high output growth, high levels of productivity, above-average growth rate in wages, favorable relative price patterns in the long-run, and they tend to exhibit favorable balances of trade in international markets. Statistical projection into the next decade predicted an increasing gap between R&D intensive and non-R&D intensive industries in the value of net exports (total exports-total imports).

A study done by the National Federation of Independent Business supported the results from the Duke study. The NFIB study concluded that the principal products of exporters tend to be more technologically advanced than those of non-exporters.

The world economy has become increasingly important to North Carolina producers. Demographic and economic trends have caused U.S. domestic markets to shrink. For many industries, increasing sales volumes and profit margins mean selling in international markets.

State assistance to existing firms in North Carolina who export or are considering exporting occurs through the Department of Agriculture, the Forest Resources Division of the Department of Natural Resources and Community Development (NRCD), and the Department of Commerce. At the North Carolina Department of Agriculture, technical and marketing assistance are provided, but only to a limited extent due to the small number of staff available for individual assistance.

In the N.C. Department of Natural Resources and Community Development (NRCD), export assistance is in the form of domestic and international promotion of the variety and quality of North Carolina's timber industries through participation in trade shows and overseas buyer identification services.

The North Carolina Department of Commerce (DOC) offers export assistance to the state's manufacturing and service industries. The majority of their clients are large to medium-sized firms that are already experienced exporters. They offer one-on-one counseling, with the most common inquiry dealing with the areas of distribution (basic market research and outlook) and the availability of financial assistance.

Assistance with in-depth training in the "how-to's" of export marketing for first-time exporters are provided by the U.S. Department of Commerce in Greensboro. These seminars transmit general information concerning export skills, much of which manufacturers have found to be unrelated to their particular industry. Very recently, the DOC has developed a targeted export industry approach which combines extensive preliminary market research with a growing familiarity with the export capabilities, both real and potential, of North Carolina producers. Seminars that provide detailed information on exporting high-growth industry products have been well received.

Additionally, the International Trade Center affiliated with North Carolina State University, and the UNC System's Small Business and Technology Development Centers, offer seminars designed to orient newcomers to the intricacies of international business transactions. But no state agency offers direct financial assistance to companies for export marketing.

Although the small business sector of the national and state economy is one of the fastest-growing sectors, the previously mentioned study by the National Federation of Independent Business found that few small businesses export. Of those which do, foreign sales usually account for less than 10% of total sales. Another finding was that the most important problem area for new exporters is obtaining market information. Outside of their areas of traditional service, bankers and freight forwarders provide little help to small exporters. The state has an important role to play in expansion of the export economy by providing small to medium-sized businesses with the tools to market North Carolina's high quality goods in the world market.

In July 1986, the North Carolina Commission on Jobs and Economic Growth requested that the Center for Applied Business Studies, at the University of North Carolina at Greensboro, conduct a survey of CEO's from firms currently operating in North Carolina. Two distinct groups were surveyed -- existing businesses, and businesses that are new and expanding.

The study's findings show that in rural areas, labor and raw materials are important location determinants. In urban areas, nearness to markets and the quality of air transportation were ranked highly. The study's findings also confirm that North Carolina's inventory and intangibles taxes are perceived as an unnecessary burden by the state's business community and should be abolished. At the same time, "quality of life" factors were rated by approximately 60 percent of the same sample group as weighing heavily in their decision to originally locate in North Carolina.

Since the revenue collected through these taxes is distributed among local governments who utilize these funds primarily to finance expenditures for the maintenance of the quality of life of their communities (schools, transportation, health care, recreation, etc.), the Commission on Jobs and Economic Growth cannot at this time endorse the abolishment of the state's inventory and intangibles taxes. A serious review of this issue would be justified at that time when additional revenue sources are identified with which local governments can finance growth-mandated community development projects.

Recommendation 5: The state should pursue initiatives promoting Manufacturing Excellence among North Carolina manufactured goods.

North Carolina should not follow the path of other states that have permitted the decline of their traditional manufacturing industries as they pursue alternate economic development strategies. Three actions are proposed as foundations for state support for its manufacturing sector.

Action 1: Continue and expand support for technology transfer initiatives

It is important to build on the state's existing manufacturing support network of the Microelectronics Center; the Biotechnology Center; the NCSU Center for Communications and Signal Processing, the Precision Engineering Center, and the Industrial Extension Service; East Carolina University's Center for Applied Technology; and other university-based initiatives thoughout the state. There are also a number of new initiatives that deserve recognition and support, such as the new cooperative patenting initiative of the Triangle Universities Center for Advanced Studies, Inc. (TUCASI), and the proposed Centennial Campus at N.C. State University.

Action 2: Broaden state support for existing small to medium-sized manufacturers

A special initiative towards the approach known as "Integrated Manufacturing Systems" for North Carolina manufactured goods would renew our state's commitment to quality and efficiency in manufacturing. It would be a major step in strengthening the state's international reputation for excellence in manufacturing.

The objective of the "Integrated Manufacturing Systems" (IMS) approach is to strengthen industry's ability to produce manufactured goods of improved quality at lower cost. Major companies such as AT&T, IBM and RJR Nabisco already have such systems in place.

An Integrated Manufacturing Systems Institute is in operation at N. C. State University in Raleigh. Established in 1984, the Institute is a multifaceted educational, research and technology transfer initiative in manufacturing systems engineering whose objectives are to:

- educate engineers in the theory and practice of advanced design and manufacturing methods

- conduct basic and applied research on topics related to contemporary manufacturing problems

- engage in technology transfer to increase productivity and the quality of manufactured products.

The IMS Institute operates with an FY 87 budget of approximately $400,000. At least ten companies are participating on a member basis in the Institute and are contributing $25,000 per year toward the total budget.

In addition, the Community College System of North Carolina is participating in a nationwide program entitled "Transforming American Industry" administered from Jackson Community College in Jackson, Michigan. Representatives from several North Carolina community colleges recently participated in a seminar in Jackson which emphasized the necessity for training future industrial workers regarding their increasing participatory role in upgrading the quality of the products they manufacture.

Broadening the application of the IMS approach to more of our manufacturing sector is necessary if North Carolina's manufacturing industries are to remain competitive with other domestic and foreign manufacturers. Quality, productivity and profitability gains must be achieved for North Carolina industry if job opportunities for North Carolina residents are to be retained and expanded.

Action 3: Improved coordination of existing resources

The Board of Governors of the University of North Carolina System should make an assessment of the extent to which resources that are already in place are known to business and industry and are efficiently utilized.

Existing training programs within universities and community colleges for both future managers and technicians should incorporate concepts and competencies that will prepare future industrial workers for increasing responsibilities for overall product quality.

The Commission recommends that the University of North Carolina System and the Department of Community Colleges undertake a comprehensive assessment of current initiatives in campus-industry cooperation and technology transfer. The goal of the assessments should be the identification of ways to improve initiatives in this area and to consider the need for expanded or additional initiatives.

It is hoped that Duke University, Wake Forest and other private institutions of research and higher education will undertake similar assessments of their initiatives to promote technology transfer and increased campus-industry cooperation.

Recommendation 6: **The state should establish an Export Development Center in the International Trade Division of the North Carolina Department of Commerce, capable of supporting exporters and responsible for increasing participation of North Carolina firms in world markets.**

A program that stimulated our state's export economy would mean more jobs and a better standard of living for state residents. An export development team could consist of experts in the areas of finance, marketing, shipping, trade agreements, etc. Such a team could also be empowered to develop additional outreach assistance programs that would encourage small and medium-sized businesses to realize their export potential.

An export development team could increase private sector awareness of the financing options currently available to North Carolina producers and develop additional means for financing export transactions. For example, export financing training programs could be organized for bank loan officers to sharpen their knowledge of the concepts and techniques of international finance. Banks in small cities and rural areas could be advised on practical, cost efficient methods of incorporating international trade into their existing structures.

A systematic approach to informing state legislators of the complexities of trade finance faced by many of their constituents could result in greater priority given to export development issues on legislative agendas. The export development team could also recommend specific state actions that would increase North Carolina's participation in federal export finance programs.

Recommendation 7: The N.C. Board of Science and Technology should undertake an inventory of applied research activities and capabilities in North Carolina, and determine the need for an applied research grant program.

Throughout the country, states have developed special initiatives to support and fund applied research. One of the best known of these initiatives is Pennsylvania's Ben Franklin Program. This Program was instituted to link business and university resources in order to make Pennsylvania's traditional industries more competitive in world markets and to spin-off new, small businesses on the leading edge of technological innovation. A state appropriation of $18 million in FY 1984-85 resulted in a match of over $55 million from the private sector, making it the largest leveraged program in the nation with its 1:3 state to non-state funding ratio.

The elements that make up North Carolina's economy are very similar to those in Pennsylvania. Both states have in place an established technological infrastructure, strong universities, a relatively high percentage of manufacturing employment to total employment, and a diversified but declining industrial base. New initiatives are needed to encourage and support applied research that will help strengthen and diversify our economy.

Support for Rural Areas

North Carolina is one of the South's most industrialized states, yet it also has one of the nation's largest rural farm populations. It is a state of towns and small cities, with no dominant large city. The largest city in the state, Charlotte, makes up no more than 7 percent of the state's total population. This pattern has evolved from several characteristics distinct to North Carolina's land, people and industry, including:

- Historically, small industrial plants, especially in textiles and apparel, located in small towns and rural areas to take advantage of the surplus farm labor and low rural wage rates.

- The traditionally dominant agricultural crop -- tobacco, an intensely cultivated crop -- has lead to the high farm densities frequently associated with the formation of small to medium-sized towns.

- Geographically, there is no one superior site that would give any one city a major advantage over any other (convergence of major highways or railroads, a superior port, etc.)

The special problems of our state's small cities and rural areas will require a special set of initiatives. These initiatives will affect 48 percent of our state's population and, in the long term, will preserve the rich heritage of which North Carolinians have always been proud.

Economists and government officials agree a two-tiered economy is developing in North Carolina in which urban areas are prospering and rural areas are in a state of accelerating decline:

- In 1982, personal income (in current dollars) averaged $10,117 for SMSAs in North Carolina compared to an average $7,981 for non-SMSAs -- or 23 percent higher in metropolitan counties than in rural communities. By 1984, the last year for which income data are available, the differential had increased to 29 percent.

- In 1983, the unemployment rate was 7.5 percent in metropolitan areas, compared to 10.9 percent in non-metropolitan areas.

- Of North Carolinians living in poverty, 58 percent are in non- metropolitan areas. The State Data Center estimated in 1983 that, of the 81 non-metropolitan counties, 21 counties -- roughly one-quarter -- had poverty rates above 25 percent. The state average in that year was 16.7 percent.

- Rural areas show public assistance recipients -- mothers with dependent children, the aged, the blind, and the disabled -- as a higher percentage of total population than urban areas.

- The average educational attainment of rural residents is well below averages for urban residents. The high school completion rate for metropolitan areas was 60.8 percent, while for non-metropolitan areas it was 48.3 percent.

The deterioration of the economic base of rural North Carolina has occurred because of the heavy dependence on agriculture and traditional industries. Since the end of World War II, agriculture has been shifting from a labor-intensive to a capital-intensive industry, resulting in reduced farm employment and increased farm size. The conditions that led to the booming agricultural market of the 1970's -- high inflation and low production in foreign countries -- have all but disappeared, leaving farmers facing declining prices and an increased debt-to-equity ratio. According to a 1985 survey undertaken by the N.C. Department of Agriculture, nearly 20 percent of the state's farmers now find themselves in severe financial hardship. This situation has been exacerbated by the declining value of farm assets which, in North Carolina, have fallen by about 12 percent since 1981.

Due to increasing foreign competition, U.S. manufacturing is also substituting capital for labor, with the majority of expenditures incurred for automation of manufacturing processes. This trend is particularly significant in North Carolina. In 1985, manufacturing made up 31.3 percent of total state nonagricultural employment, compared to a national average of 19.8 percent. Estimates of the impacts of computer-automated manufacturing on job displacements vary, but few dispute considerable short-term displacement. One study predicts that 3 million manufacturing jobs nationally will be lost by the year 2003, with elimination of all manufacturing jobs by the year 2025. According to the 1980 Census, North Carolina's proportion of operatives to total employment is more than 60 percent greater than the corresponding national average.

The loss of manufacturing jobs has magnified the decline in agriculture. In 1982, about 34 percent of North Carolina farmers worked off-farm 200 or more days -- the approximate equivalent of a full-time job. The strong interdependence of agriculture and manufacturing, which once lowered the financial risk of farming, now contributes to losses in our rural communities.

The changing character of manufacturing has affected industrial location patterns. Industries now place greater emphasis on nearness to markets, availability of a highly skilled labor pool, financing issues, and "quality of life" factors (the availability of good schools, health care, and recreation). Several studies of the current industrial base in the South have concluded that industries are now gravitating toward urban growth areas.

An encouraging note for rural areas is the research done by the Southern Growth Policies Board which found that a significant proportion of the growth from occupations in non-metropolitan areas is in the expansion of existing business and the establishment of new firms by local entrepreneurs. However, the rate of non-metro growth and development will be limited if the decline of predominantly rurally-located traditional industries continues at its present rate and displaced workers are not absorbed by the local economy.

Recommendation 8: The state should create a North Carolina Rural Economic Development Center.

Numerous organizations, both public and private, are studying the economic issues relevant to rural growth, but no one group is charged with the long-term analysis of the effects of national and state policies on North Carolina's rural economy and the generation of appropriate solutions to its unique problems. A Rural Economic Development Center should be established to address declining conditions in our rural areas with special emphasis on agriculture, the decline of manufacturing employment, the opportunities for natural resource-based industries, and the loss of businesses in small cities.

The Rural Economic Development Center would have as its primary mission the development of an action agenda for state rural economic development. To accomplish this, the operations of the Center would consist of a number of components: demonstration projects, research, training, and information collection and dissemination.

The Center would work actively with rural leaders at the local level to identify barriers to economic growth in specific communities and regions. Ongoing demonstration projects would field-test innovative solutions to regional development problems and interpret and modify results in light of appropriate implementation for North Carolina. All projects conducted by the Center would be undertaken cooperatively with local public and private leaders as well as other active rural economic development agencies and organizations.

Research projects, designed to identify solutions to locally-defined developmental concerns, would be conducted through a series of pilot projects. Successful strategies would be evaluated and considered for use in other locations. Center staff could participate in the implementation of local economic development initiatives, by providing technical assistance and in certain instances by providing financial assistance.

The Center would also serve a clearinghouse function as a comprehensive source of economic and social data concerning North Carolina's rural counties and municipalities. At present, responsibility for the collection of economic data is dispersed among state agencies. County data are scarce and often unreliable, and county governments with limited resources lack the time and sophisticated statistical skills to interpret state level aggregates and determine specific impacts on their particular county's future development. A data base would be established at the Center consisting of important economic indicators for each county, and reports vital to local government planning efforts would be published regularly.

The Rural Economic Development Center should be a non-profit, tax-exempt corporation. It would be directed by a Board consisting of business, academic and local leaders, and staffed with people who have proven their expertise in implementing successful economic development programs. The Center would draw on experts at the state and national levels and would have affiliate members such as the Center for Improving Mountain Living, Western North Carolina Tomorrow, Northeastern North Carolina Tomorrow, and the East Carolina University Regional Development Institute. A proposed annual budget of $2 million would cover administrative costs and provide a fund for pilot projects and research. The Center should also seek private funds in support of its programs.

Recommendation 9: The state should target a portion of water and sewer funds to rural areas.

In another section of this report is a recommendation that the state establish a Clean Water Grant and Loan Program. A portion of this fund should be targeted each year to rural areas on a critical needs basis. Any unused targeted funds would revert back to the total fund after a year's time and would be made available to urban areas to meet their expanding water and sewer needs.

Recommendation 10: An appropriate state agency should designate severely distressed rural areas of the state as Growth Opportunity Counties and establish a system of tax credits for businesses that create jobs within designated county units.

North Carolina shares the concern of other Southeastern states that characteristics common to the region's rural areas place them at a disadvantage to participation in the region's prosperous economic mainstream. Low average educational attainment rates, relatively high percentages of residents receiving public assistance, and remoteness from institutions of higher education providing technical assistance make certain rural areas unattractive to new industry and forebode future economic progress insufficiently stable to support existing industry expansion.

A state/local/private partnership is proposed to engender private sector initiatives for the acceleration of economic development in these distressed areas. This partnership will consist of a system of state tax credits to be given to existing firms willing to expand and new firms willing to relocate to state-designated Growth Opportunity Counties.

Similar programs targeting distressed areas are operating in Florida, Arkansas, Tennessee, Alabama, Georgia, and South Carolina. An appropriate agency within state government, possibly the Department of Administration or the Department of Commerce, would be charged with the implementation of the program. The local unemployment rate and level of per capita personal income are standard indicators of need used by many other states to identify severely distressed areas. Based upon an analysis of North Carolina state economic trends over the past five years, recommended qualifying criteria in North Carolina would be a county unemployment rate 25 percent above the state's average rate of unemployment, and a county per capita income level that is at or below 75 percent of the state per capita income.

Tax incentives would be provided to businesses that create jobs within designated growth opportunity counties. Businesses already located in these counties would be eligible for a tax credit for any new job created throughout the proposed four-year life span of the program. The tax credit would be allowable each year for four years, limiting the revenue concessions aspect of the program to a maximum life of seven years.

The designation of Growth Opportunity Counties would occur within a reasonable administrative period following enactment of enabling legislation. Growth Opportunity Counties would retain their special status for four years, after which time the program would terminate. Further study of an appropriate allowable tax credit and its impact on future tax revenues is necessary before a specific amount can be finalized, but a probable range, based on the experience of other states, of $300-$750 per each new job created is indicated. A carry over provision that would limit a firm's total tax credit to 50 percent of the tax liability for the taxable year is recommended to facilitate accurate revenue projections used in state economic development planning. Also recommended is a non-transferability provision that would limit eligibility for tax credits to those firms where job creation actually occurred.

Low Income Housing*

Recent studies indicate that the poor are finding it more and more difficult to afford standard housing. These reports indicate that over 97,800 families are living in substandard homes and that over 188,600 families live in homes that they cannot afford.

Several conferences have recently been held across the state that targeted on this problem. Exacerbating the dilemma for low income families is the near total withdrawal of federal support for housing the poor. In fact, public housing suffered a 94 percent cut in budget authority from 1981 to 1986. Providing safe, sanitary, and decent housing for the poor has thus shifted to the state, local and private sectors.

In addition to the social benefits derived from better housing for the poor, there is a direct and indirect employment impact for the state's economy. According to the National Association of Homebuilders, construction of one home leads to 1.78 direct person years of employment. Thus, for every 1,000 homes constructed, 1780 man years of work are generated directly with many more jobs created as the support industries to these employees are impacted.

Presently, the North Carolina Housing Trust Fund Study Commission in studying alternatives for increasing support for low income housing for our citizens.

Recommendation 11: We support the work of the Housing Trust Fund Study Commission and encourage them to develop ways to assist in providing standard housing at affordable prices for North Carolina low income families.

Currently, the Housing Trust Fund Study Commission is investigating sources of revenue, program uses and administrative arrangements for a North Carolina Housing Trust Fund. The Commission believes the need is urgent and that public-private cooperating arrangements should be developed to assist in meeting these needs.

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*On September 30, 1986, the Commission voted to include this section in the Jobs Development report.

APPENDIX I

LETTERS TO STATE BOARDS, COMMISSIONS AND AGENCIES

STATE OF NORTH CAROLINA
COMMISSION ON JOBS AND ECONOMIC GROWTH
OFFICE OF THE LIEUTENANT GOVERNOR
RALEIGH 27611

JIM MELVIN
CHAIRMAN
DR. T. R. RICHMOND
VICE CHAIRMAN

ROBERT B. JORDAN III
LIEUTENANT GOVERNOR

BILLY RAY HALL
EXECUTIVE DIRECTOR
(919) 733-3732

November 12, 1986

The Honorable Howard H. Haworth
Secretary of Commerce
430 N. Salisbury Street
Raleigh, NC 27611

Dear Secretary Haworth:

The Commission on Jobs and Economic Growth was created by the 1985 General Assembly and placed in the Lt. Governor's office. Our Commission's charge was to study the state's economy and make recommendations to the 1987 Session of the General Assembly and to Executive Agencies of State Government. The 30 members of the Commission have taken their jobs very seriously and have spent the past year working on the attached report. While these recommendations are limited in number they represent extensive work by the Commission. We have heard from many state and local government officials, representatives of the business community,and have devoted ourselves to careful consideration of each recommendation.

We realize that you may already be addressing some of these ideas along with many others in your busy schedule; however, we hope you will take the time to review our proposals and that you will see their merit for implementation.

Several of our recommendations are dealing with specific proposals for your department. The recommendations which we would like to call your attention to are:

Jobs Development

Recommendation 1: The N.C. Department of Commerce should use an indicator of economic progress that includes measures of growth in per capita income, rate of new business formation and failures, growth rate of the number of self-employed, and the performance of primary and secondary schools.

Recommendation 2: The state should strengthen and coordinate support for small business development.

Action 1: The public schools, community colleges and university sytem should place increasing emphasis on entrepreneurship education.

Action 2: Establishment of a one-stop permitting program.

Action 3: Support for small business assistance

Action 4: Coordination by the Department of Commerce, local governments, local chambers of commerce, committees and other economic development officials in the dissemination of information on small business assistance.

Recommendation 4: The State Treasurer should work with the Department of Commerce and the North Carolina Association of County Commissioners to investigate the feasibility of issuing umbrella industrial revenue bonds in North Carolina.

Recommendation 6: The state should establish an Export Development Center in the International Trade Division of the North Carolina Department of Commerce, capable of supporting exporters and responsible for increasing participation of North Carolina firms in world markets.

Recommendation 7: The N.C. Board of Science and Technology should undertake an inventory of applied research activities and capabilities in North Carolina, and determine the need for an applied research grant program.

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Natural Resources and Public Facilities

Recommendation 11: Support should be given to expansion of existing fisheries processing plants and recruitment of new plants.

The background along with a further explanation of each recommendation is included in our final report and the members of our commission will be pleased to discuss and of our ideas at your convenience.

Sincerely,

Jim Melvin

Jim Melvin

STATE OF NORTH CAROLINA
COMMISSION ON JOBS AND ECONOMIC GROWTH
OFFICE OF THE LIEUTENANT GOVERNOR
RALEIGH 27611

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LIEUTENANT GOVERNOR

BILLY RAY HALL
EXECUTIVE DIRECTOR
(919) 733-3732

November 12, 1986

Mr. Mebane Pritchett
P. O. Box 690
Chapel Hill, NC 27514

Dear Mr. Pritchett:

The Commission of Jobs and Economic Growth was created by the 1985 General Assembly and placed in the Lt. Governor's office. Our Commission's charge was to study the state's economy and make recommendations to the 1987 Session of the General Assembly and to Executive Agencies of State Government. The 30 members of the Commission have taken their jobs very seriously and have spent the past year working on the attached report. While these recommendations are limited in number they represent extensive work by the Commission. We have heard from many state and local government officials, representatives of the business community, and have carefully considered each recommendation.

As chairman of the State Board of Education, we realize that you may already be addressing some of these ideas along with many others in your busy schedule; however, we hope you will take the time to review our proposals and that you will see their merit for implementation.

A principal finding of our Commission, which is no surprise to you, is the fact that our economy depends upon the quality of our labor force and your role in determining that quality is crucial. We have made the following recommendations in this area:

Labor Force Development

Recommendation 4: The state, in conjunction with support from the private sector, should allocate the necessary resources to address the literacy problem in North Carolina with the goal of a substantial reduction in illiteracy rates by the year 2000.

Action 1: Needs assessment survey, and strategy for implementation

Action 2: Statewide clearinghouse/referral/training service

Action 3: Support education of prison population

Action 4: Basic literacy requirement for drivers' licenses

Recommendation 7: The state should continue implementation of the State Basic Education Program to ensure that every person has the opportunity to learn basic academic and vocational skills, and to ensure that every teacher is given ample opportunity for career enhancement and professional development.

Recommendation 8: The state should continue its dropout prevention initiative according to the schedule of implementation of the Basic Education Program.

Recommendation 9: Public schools and the community colleges should be mandated to work together to ensure that students who drop out of public schools are referred to the community college system or other appropriate service organizations.

Recommendation 10: The state should expand the Job Readiness Training Program and other successful school-to-work transition and guidance programs piloted in North Carolina in recent years.

Recommendation 11: The "2 plus 2" model that prepares high school students for post-secondary technical programs, and ultimately for post-secondary advanced technical careers, should be initiated across the state.

Recommendation 12: The State Board of Education should make entrepreneurial education a priority and expand the range of opportunities and resources available to students across the state interested in this area. (See Recommendation 2, Action 1 in the section on Jobs Development)

Recommendation 13: The State Board of Education should continue to identify and address education problems in rural areas.

Recommendation 14: The Board of Education, Board of Community Colleges and the UNC Board of Governors should recognize exemplary public/private partnerships for their importance to the future development of the state labor force. Information concerning efficient and effective partnerships should be gathered and disseminated throughout the respective systems to provide all schools with the background necessary to form similar partnerships at the local level.

****

Jobs Development

Recommendation 2: The state should strengthen and coordinate support for small business development.

Action 1: The public schools, community colleges and university system should place increasing emphasis on entrepreneurship education.

As you can see, our labor force recommendation number 4 and jobs development recommendation number 2 are basically the same. Both committees felt so strongly about the real benefit to our future economy of acquainting our youth with the basics of business ownership we chose to repeat the recommendation.

The Commission appreciates the opportunity we have had to work with state government. Our members would be glad to discuss any ideas with you at your convenience.

Sincerely,

Jim Melvin

Jim Melvin

STATE OF NORTH CAROLINA
COMMISSION ON JOBS AND ECONOMIC GROWTH
OFFICE OF THE LIEUTENANT GOVERNOR
RALEIGH 27611

JIM MELVIN
CHAIRMAN
DR. T. R. RICHMOND
VICE CHAIRMAN

ROBERT B. JORDAN III
LIEUTENANT GOVERNOR

BILLY RAY HALL
EXECUTIVE DIRECTOR
(919) 733-3732

November 12, 1986

Mr. John A. Forlines
P. O. Box 128
Granite Falls, NC 28630

Dear Mr. Forlines:

The Commission on Jobs and Economic Growth was created by the 1985 General Assembly and placed in the Lt. Governor's office. Our Commission's charge was to study the state's economy and make recommendations to the 1987 Session of the General Assembly and to Executive Agencies of State Government. The 30 members of the Commission have taken their jobs very seriously and have spent the past year working on the attached report. While these recommendations are limited in number they represent extensive work by the Commission. We have heard from many state and local government officials, representatives of the business community,and have devoted ourselves to careful consideration of each recommendation.

As chairman of the Board of Community Colleges, we realize that you may already be addressing some of these ideas along with many others in your busy schedule; however, we hope you will take the time to review our proposals and that you will see their merit for implementation.

A principal finding of our Commission, which is no surprise to you is the fadt that our economy depends upon the quality of our labor force and your role in determining that quality is crucial. We have made the following recommendations in this area:

Labor Force Development

Recommendation 1: The state universities and community colleges should develop methods to formalize communication with the private sector, to ensure that training programs adequately address current and estimated future labor demand. It is further recommended that a biannual report on progress in this area be submitted by the UNC Board of Governors and the Board of Community Colleges to the General Assembly Fiscal Research Division and Chairmen of the House/Senate Appropriations Committees.

Recommendation 3: The state should upgrade the faculty and equipment at all state community colleges to ensure their system's ability to prepare the best possible labor force.

Recommendation 4: The state, in conjunction with support from the private sector, should allocate the necessary resources to address the literacy problem in North Carolina with the goal of a substantial reduction in illiteracy rates by the year 2000.

Action 1: Needs assessment survey, and strategy for implementation

Action 2: Statewide clearinghouse/referral/training service

Action 3: Support education of prison population

Action 4: Basic literacy requirement for drivers' licenses

Recommendation 9: Public schools and the community colleges should be mandated to work together to ensure that students who drop out of public schools are referred to the community college system or other appropriate service organizations.

Recommendation 11: The "2 plus 2" model that prepares high school students for post-secondary technical programs, and ultimately, for post-secondary advanced technical careers, should be initiated across the state.

Recommendation 14: The Board of Education, Board of Community Colleges and the UNC Board of Governors should recognize exemplary public/private partnerships for their importance to the future development of the state labor force. Information concerning efficient and effective partnerships should be gathered and disseminated throughout the respective systems to provide all schools with the background necessary to form similar partnerships at the local level.

****

Natural Resources and Public Facilities

Recommendation 12: Business assistance should be provided to fishermen and fish processing businessmen.

****

Jobs Development

Recommendation 2: The state should strengthen and coordinate support for small business development.

Action 1: The public schools, community colleges and university sytem should place increasing emphasis on entrepreneurship education.

Action 2: Establishment of a one-stop permitting program.

Action 3: Support for small business assistance

Action 4: Coordination by the Department of Commerce, local governments, local chambers of commerce, committees and other economic development officials in the dissemination of information on small business assistance.

Recommendation 5: The state should pursue initiatives promoting Manufacturing Excellence among North Carolina manufactured goods.

Action 1: Continue and expand support for technology transfer initiatives

Action 2: Broaden state support for existing small to medium-sized manufacturers

Action 3: Improved coordination of existing resources

The Commission has learned a great deal about our very fine Community College System this year and commend you and your predecessors for developing one of our states finest assets for economic development. We sincerely hope you will seriously consider our ideas. The members of our Commission stand ready and willing to discuss our ideas with you at your convenience.

Sincerely,

Jim Melvin

Jim Melvin

STATE OF NORTH CAROLINA
COMMISSION ON JOBS AND ECONOMIC GROWTH
OFFICE OF THE LIEUTENANT GOVERNOR
RALEIGH 27611

JIM MELVIN
CHAIRMAN
DR. T. R. RICHMOND
VICE CHAIRMAN

ROBERT B. JORDAN III
LIEUTENANT GOVERNOR

BILLY RAY HALL
EXECUTIVE DIRECTOR
[illegible]

November 12, 1986

Mr. Philip G. Carson
P. O. Box 7246
Asheville, NC 28807

Dear Mr. Carson:

The Commission on Jobs and Economic Growth was created by the 1985 General Assembly and placed in the Lt. Governor's office. Our Commission's charge was to study the state's economy and make recommendations to the 1987 Session of the General Assembly and to Executive Agencies of State Government. The 30 members of the Commission have taken their jobs very seriously and have spent the past year working on the attached report. While these recommendations are limited in number they represent extensive work by the Commission. We have heard from many state and local government officials, representatives of the business community,and have devoted ourselves to careful consideration of each recommendation.

As Chairman of the UNC Board of Governors, we realize that you may already be addressing some of these ideas along with many others in your busy schedule; however, we hope you will take the time to review our proposals and that you will see their merit for implementation.

A principal finding of our Commission, which is no surprise to you, is the fact that our economy depends upon the quality of our labor force and your role in determining that quality is crucial. We have made the following recommendations in this area:

****

Labor Force Development

Recommendation 1: The state universities and community colleges should develop methods to formalize communication with the private sector, to ensure that training programs adequately address current and estimated future labor demand. It is further recommended that a biannual report on progress in this area be submitted by the UNC Board of Governors and the Board of Community Colleges to the General Assembly Fiscal Research Division and Chairmen of the House/Senate Appropriations Committees.

Recommendation 14: The Board of Education, Board of Community Colleges and the UNC Board of Governors should recognize exemplary public/private partnerships for their importance to the future development of the state labor force. Information concerning efficient and effective partnerships should be gathered and disseminated throughout the respective systems to provide all schools with the background necessary to form similar partnerships at the local level.

****

Jobs Development

Recommendation 2: The state should strengthen and coordinate support for small business development.

Action 1: The public schools, community colleges and university sytem should place increasing emphasis on entrepreneurship education.

Action 2: Establishment of a one-stop permitting program.

Action 3: Support for small business assistance

Action 4: Coordination by the Department of Commerce, local governments, local chambers of commerce, committees and other economic development officials in the dissemination of information on small business assistance.

Recommendation 5: The state should pursue initiatives promoting Manufacturing Excellence among North Carolina manufactured goods.

Action 1: Continue and expand support for technology transfer initiatives.

Action 2: Broaden state support for existing small to medium-sized manufacturers.

Action 3: Improved coordination of existing resources.

Our Commission was fortunate in its deliberations to have many of the very fine faculty from several of the universtities to participate in its work. Their insights provided immeasurable help to our work as has the entire University System to our state's economy. We have concluded that our state's economy has achieved its record of growth to a large degree because of the excellent Universities which you and you predecessors have created. On behalf of our Commission we extend our appreciation and admiration.

We have truly appreciated our opportunity to learn and share our thinking on North Carolina's economy and hope you will find that our ideas have merit. The members of our Commission will be happy to discuss our report with you at your convenience.

Sincerely,

Jim Melvin

Jim Melvin

STATE OF NORTH CAROLINA
COMMISSION ON JOBS AND ECONOMIC GROWTH
OFFICE OF THE LIEUTENANT GOVERNOR
RALEIGH 27611

JIM MELVIN
CHAIRMAN
DR T R RICHMOND
VICE CHAIRMAN

ROBERT B JORDAN III
LIEUTENANT GOVERNOR

BILLY RAY HALL
EXECUTIVE DIRECTOR
(919) 733-3732

November 12, 1986

The Honorable S. Thomas Rhodes
Secretary
Natural Resources and Community Development
512 N. Salisbury Street
Raleigh, NC 27511

Dear Secretary Rhodes:

The Commission on Jobs and Economic Growth was created by the 1985 General Assembly and placed in the Lt. Governor's office. Our Commission's charge was to study the state's economy and make recommendations to the 1987 Session of the General Assembly and to Executive Agencies of State Government. The 30 members of the Commission have taken their jobs very seriously and have spent the past year working on the attached report. While these recommendations are limited in number they represent extensive work by the Commission. We have heard from many state and local government officials, representatives of the business community,and have devoted ourselves to careful consideration of each recommendation.

We realize that you may already be addressing some of these ideas along with many others in your busy schedule; however, we hope you will take the time to review our proposals and that you will see their merit for implementation.

Our recommendations that fall within your agency are:

Natural Resources and Public Facilities

Recommendation 5: The Department of Natural Resources and Community Development should work with the League of Municipalities and the regional councils of local government to hold workshops to notify local governments of the July 1, 1988 deadline for either providing a municipal plan for compliance or compliance with the Federal Clean Water Act.

Recommendation 7: The Division of Forestry in the Department of Natural Resources and Community Development should initiate efforts to expand the use of low-grade wood fiber.

Recommendation 8: Emphasis on forestry education through the state forests and forestry extension personnel should be expanded.

Recommendation 9: The State Forester should pursue development of a Voluntary Training and Certification Program for logging operators as a means of preventing and reducing environmental damage during harvesting.

****

Jobs Development

Recommendation 5: The state should pursue initiatives promoting Manufacturing Excellence among North Carolina manufactured goods.

Action 1: Continue and expand support for technology transfer initiatives.

Action 2: Broaden state support for existing small to medium-sized manufacturers.

Action 3: Improved coordination of existing resources.

Recommendation 10: An appropriate state agency should designate severely distressed rural areas of the state as Growth Opportunity Counties and establish a system of tax credits for businesses that create jobs within designated county units.

Our Commission members would be very glad to discuss any of our ideas with you or your staff at your convenience.

Sincerely,

Jim Melvin

Jim Melvin

STATE OF NORTH CAROLINA
COMMISSION ON JOBS AND ECONOMIC GROWTH
OFFICE OF THE LIEUTENANT GOVERNOR
RALEIGH 27611

JIM MELVIN
CHAIRMAN
DR. T. R. RICHMOND
VICE CHAIRMAN

ROBERT B. JORDAN III
LIEUTENANT GOVERNOR

BILLY RAY HALL
EXECUTIVE DIRECTOR
(919) 733-3732

November 12, 1986

Mr. Ronald H. Davis, Chairman
Jobs Training Coordinating Council
P. O. Box 20888
Greensboro, NC 27406

Dear Mr. Davis.

The Commission on Jobs and Economic Growth was created by the 1985 General Assembly and placed in the Lt. Governor's office. Our Commission's charge was to study the state's economy and make recommendations to the 1987 Session of the General Assembly and to Executive Agencies of State Government. The 30 members of the Commission have taken their jobs very seriously and have spent the past year working on the attached report. While these recommendations are limited in number they represent extensive work by the Commission. We have heard from many state and local government officials, representatives of the business community,and have devoted ourselves to careful consideration of each recommendation.

We realize that you may already be addressing some of these ideas along with many others in your busy schedule; however, we hope you will take the time to review our proposals and that you will see their merit for implementation.

We firmly believe that the key to our state's future economic health depends upon the quality of our labor force and have made 14 recommendations that we believe will enhance our labor force.
One of our recommendations is proposed for your consideration;

Recommendation 5: The state, specifically the Job Training Coordinating Council formed under the Job Training Partnership Act, should work toward coordinating available job training funds at the federal, state and local levels, in order to best serve all North Carolina citizens, particularly those experiencing severe economic hardship and those with physical, mental and emotional disabilities.

We were impressed with the many accomplishments across the state by the Local Private Industry Councils and felt that many of the initiatives that they have take are significant for our state's labor force.

Our Commission members hope you will give this recommendation your careful consideration and we will be pleased to discuss our ideas with at your convenience.

Sincerely,

Jim Melvin

Jim Melvin

STATE OF NORTH CAROLINA
COMMISSION ON JOBS AND ECONOMIC GROWTH
OFFICE OF THE LIEUTENANT GOVERNOR
RALEIGH 27611

JIM MELVIN
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DR. T. R. RICHMOND
VICE CHAIRMAN

ROBERT B. JORDAN III
LIEUTENANT GOVERNOR

BILLY RAY HALL
EXECUTIVE DIRECTOR
919 733-3732

November 12, 1986

The Honorable J. J. Harrington
P. O. Drawer 519
Lewiston/Woodville, NC 27849

The Honorable H. Martin Lancaster
P. O. Box 916
Goldsboro, NC 27533

Dear Sirs:

The Commission of Jobs and Economic Growth was created by the 1985 General Assembly and placed in the Lt. Governor's office. Our Commission's charge was to study the state's economy and make recommendations to the 1987 Session of the General Assembly and to Executive Agencies of State Government. The 30 members of the Commission have taken their jobs very seriously and have spent the past year working on the attached report. While these recommendations are limited in number they represent extensive work by the Commission. We have heard from many state and local government officials, representatives of the business community,and have devoted ourselves to careful consideration of each recommendation.

As Co-Chairmen of the Simplified Business Licensing Study Commission, we realize that you are already addressing some of these ideas along with many others in your busy schedule; however, we hope you will take the time to review our proposals and that you will see their merit for implementation.

As you will note from our report we have devoted considerable attention to the need for our state to support our small businesses. We were briefed on the excellent work of your study commission and are very encouraged that your group will develop significant proposals for moving the state toward a one stop permitting system for business start-up and expansion. The specific wording and background information on our recommendation appears on page 45 of our report.

We look forward to your action and members of our commission will be pleased to share our ideas with you at your convenience.

Sincerely,

Jim Melvin
Jim Melvin

STATE OF NORTH CAROLINA
COMMISSION ON JOBS AND ECONOMIC GROWTH
OFFICE OF THE LIEUTENANT GOVERNOR
RALEIGH 27611

JIM MELVIN
CHAIRMAN
DR. T. R. RICHMOND
VICE CHAIRMAN

ROBERT B. JORDAN III
LIEUTENANT GOVERNOR

BILLY RAY HALL
EXECUTIVE DIRECTOR
[illegible]

November 12, 1986

The Honorable James A. Graham
Commissioner of Agriculture
Agriculture Building
1 West Edenton Street
Raleigh, NC 27611

Dear Commisioner Graham:

The Commission on Jobs and Economic Growth was created by the 1985 General Assembly and placed in the Lt. Governor's office. Our Commission's charge was to study the state's economy and make recommendations to the 1987 Session of the General Assembly and to Executive Agencies of State Government. The 30 members of the Commission have taken their jobs very seriously and have spent the past year working on the attached report. While these recommendations are limited in number they represent extensive work by the Commission. We have heard from many state and local government officials, representatives of the business community,and have devoted ourselves to careful consideration of each recommendation.

We realize that you may already be addressing some of these ideas along with many others in your busy schedule; however, we hope you will take the time to review our proposals and that you will see their merit for implementation.

As you know we have been laboring diligently to address the dual nature of our economy: urban areas growing and rural areas facing real problems. Two of our committees have come up with recommendations that we feel will go a long way toward helping our rural areas. For that reason we would like to call to your attention those recommendations of the Jobs Development and the Natural Resources/Public Facilities committees.

Our Commission sincerely hopes you will carefully consider our ideas and we would be glad to meet with or your staff to share our thinking at your convenience.

Sincerely,

Jim Melvin

Jim Melvin

STATE OF NORTH CAROLINA
COMMISSION ON JOBS AND ECONOMIC GROWTH
OFFICE OF THE LIEUTENANT GOVERNOR
RALEIGH 27611

JIM MELVIN
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DR. T. R. RICHMOND
VICE CHAIRMAN

ROBERT B. JORDAN III
LIEUTENANT GOVERNOR

BILLY RAY HALL
EXECUTIVE DIRECTOR
[illegible]

November 12, 1986

The Honorable Anthony E. Rand
P. O. Box 1239
Fayetteville, NC 28302

The Honorable David H. Diamont
East Surry High School
Route 1
Pilot Mountain, NC 27041

Dear Sirs:

The Commission on Jobs and Economic Growth was created by the 1985 General Assembly and placed in the Lt. Governor's office. Our Commission's charge was to study the state's economy and make recommendations to the 1987 Session of the General Assembly and to Executive Agencies of State Government. The 30 members of the Commission have taken their jobs very seriously and have spent the past year working on the attached report. While these recommendations are limited in number they represent extensive work by the Commission. We have heard from many state and local government officials, representatives of the business community,and have devoted ourselves to careful consideration of each recommendation.

As Co-Chairmen of the Housing Trust Fund Study Commission, we realize that you may already be addressing some of these ideas along with many others in your busy schedule; however, we hope you will take the time to review our proposals and that you will see their merit for implementation.

We especially want to call your attention to our recommendation that supports the work of your study commission. Our members unanimously support your efforts to develop increased opportunities for our state's low income residents to have an opportunity to live in safe decent housing. We support your efforts because of the need of these people and because we realize that efforts to construct this housing will provide increased jobs for those in home construction and in the support industries.

The members of our Commission will be glad to discuss our thinking further at your convenience.

Sincerely,

Jim Melvin

Jim Melvin

STATE OF NORTH CAROLINA
COMMISSION ON JOBS AND ECONOMIC GROWTH
OFFICE OF THE LIEUTENANT GOVERNOR
RALEIGH 27611

JIM MELVIN
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ROBERT B. JORDAN III
LIEUTENANT GOVERNOR

BILLY RAY HALL
EXECUTIVE DIRECTOR
(919) 733-3732

November 12, 1986

The Honorable Kenneth C. Royall, Jr.
P. O. Box 8766
Durham, NC 27707

The Honorable Foyle Hightower, Jr.
Route 2, Box 2
Wadesboro, NC 28170

Dear Sirs:

The Commission of Jobs and Economic Growth was created by the 1985 General Assembly and placed in the Lt. Governor's office. Our Commission's charge was to study the state's economy and make recommendations to the 1987 Session of the General Assembly and to Executive Agencies of State Government. The 30 members of the Commission have taken their jobs very seriously and have spent the past year working on the attached report. While these recommendations are limited in number they represent extensive work by the Commission. We have heard from many state and local government officials, representatives of the business community,and have devoted ourselves to careful consideration of each recommendation.

As Co-Chairmen of the Legislative Study Commission on Infrastructure, we realize that you may already be addressing some of these ideas along with many others in your busy schedule; however, we hope you will take the time to review our proposals and that you will see their merit for implementation.

We have developed the following three recommendations and request your consideration of them as you address our states infrastructure needs.

Recommendation 2: The Department of Administration should develop a state public service facility plan that identifies public facility needs in a ten-year period with priorities established for biennium funding keyed to the ten-year plan.

Recommendation 3: The General Assembly should establish a Local Public Facilities for Economic Development program.

Recommendation 4: The state should establish a Clean Water Grant and Loan Program.

****

Jobs Development

Recommendation 9: The state should target a portion of water and sewer funds to rural areas.

Our commission members would be plased to meet with you to discuss further our ideas at your convenience.

Sincerely,

Jim Melvin

Jim Melvin

STATE OF NORTH CAROLINA
COMMISSION ON JOBS AND ECONOMIC GROWTH
OFFICE OF THE LIEUTENANT GOVERNOR
RALEIGH 27611

JIM MELVIN
CHAIRMAN
DR. T. R. RICHMOND
VICE CHAIRMAN

ROBERT B. JORDAN III
LIEUTENANT GOVERNOR

BILLY RAY HALL
EXECUTIVE DIRECTOR
[illegible]

November 12, 1986

Honorable Harlan E. Boyles
State Treasurer
325 N. Salisbury Street
Raleigh, NC 27611

Dear Secretary Boyles:

The Commission on Jobs and Economic Growth was created by the 1985 General Assembly and placed in the Lt. Governor's office. Our Commission's charge was to study the state's economy and make recommendations to the 1987 Session of the General Assembly and to Executive Agencies of State Government. The 30 members of the Commission have taken their jobs very seriously and have spent the past year working on the attached report. While these recommendations are limited in number they represent extensive work by the Commission. We have heard from many state and local government officials, representatives of the business community,and have devoted ourselves to careful consideration of each recommendation.

We respectively submit for your consideration our recommendation that you work with the Association of County Commissioners and the Department of Commerce to assess the possibility of umbrella industrial revenue bonds. This idea came about as we were studying ways in which the state could promote the development of small business. The background on this recommendation is found on page 47 of our report. Dave Phillips chaired the committee that developed this idea and will be glad to discuss it with you or your staff.

We appreciate your work on behalf of North Carolina and look forward to your response.

Sincerely,

Jim Melvin

Jim Melvin

STATE OF NORTH CAROLINA
COMMISSION ON JOBS AND ECONOMIC GROWTH
OFFICE OF THE LIEUTENANT GOVERNOR
RALEIGH 27611

JIM MELVIN
CHAIRMAN
DR. T. R. RICHMOND
VICE CHAIRMAN

ROBERT B. JORDAN III
LIEUTENANT GOVERNOR

BILLY RAY HALL
EXECUTIVE DIRECTOR
[illegible]

November 12, 1986

The Honorable Russell Walker
East Dixie Drive
Asheboro, NC 27203

The Honorable Charles D. Owens
P.O. Box 610
Forest City, NC 28043

Dear Sirs:

The Jobs and Economic Growth was created by the 1985 General Assembly and placed in the Lt. Governor's office. Our Commission's charge was to study the state's economy and make recommendations to the 1987 Session of the General Assembly and to Executive Agencies of State Government. The 30 members of the Commission have taken their jobs very seriously and have spent the past year working on the attached report. While these recommendations are limited in number they represent extensive work by the Commission. We have heard from many state and local government officials, representatives of the business community,and have devoted ourselves to careful consideration of each recommendation.

As Co-Chairmen of the Enterprise Zone - Venture Capital Study Commission, we realize that you may already be addressing some of these ideas along with many others in your busy schedule; however, we hope you will take the time to review our proposals and that you will see their merit for implementation.

A principal finding of our Commission was the need for seed and start-up capital for small businesses. This was pointed out by numerous individuals as they came before us. We were particularly impressed with the reported contribution of small business to new employment for our state's citizens and the projected significance of small business to our state's future economic development. Realizing that your Study Commission was addressing capital needs in great detail we felt it appropriate to make the following recommendation to you.

Recommendation 3: The state should establish financing programs that will address the start-up, expansion and/or working capital needs of businesses.

We were very impressed with several other states programs which addressed this need by offering tax incentives for private investment in small business loan programs. We were also impressed with the small business loan programs currently being operated by the Neuse River Council of Governments and the Southwestern Planning and Economic Development Commission.

Our Commission believes the state truly has an opportunity to address a real need among small business by initiating an effort along these lines. We commend your committee for its hard work and look forward to your final report.

Sincerely,

Jim Melvin

Jim Melvin

APPENDIX II

LEGISLATIVE PROPOSALS

The Commission is having the following legislation drafted at this time.

1. AN ACT TO ADDRESS THE LITERACY PROBLEM IN NORTH CAROLINA WITH THE GOAL OF SUBSTANTIAL REDUCTION IN ILLITERACY RATES BY THE YEAR 2000.
2. AN ACT TO DIRECT THE PUBLIC SCHOOLS TO REFER STUDENTS WHO DROP OUT OF THE PUBLIC SCHOOLS TO THE COMMUNITY COLLEGE SYSTEM OR TO OTHER APPROPRIATE SERVICES ORGANIZATION.
3. AN ACT TO ESTABLISH THE LEGISLATIVE COMMISSION ON REGIONAL GROWTH TRENDS AND DEVELOPMENT ISSUES.
4. AN ACT TO ESTABLISH A CLEAN WATER GRANT AND LOAN PROGRAM.
5. AN ACT TO ESTABLISH A LOCAL PUBLIC FACILITIES FOR ECONOMIC DEVELOPMENT PROGRAM.
6. AN ACT TO ESTABLISH THE NORTH CAROLINA FORESTRY COMMISSION.
7. AN ACT TO APPROPRIATE FUNDS FOR THE NORTH CAROLINA RURAL ECONOMIC DEVELOPMENT CENTER.
8. AN ACT TO ESTABLISH GROWTH OPPORTUNITY COUNTIES AND PROVIDE FOR A SYSTEM OF STATE INCOME TAX CREDITS FOR BUSINESSES THAT CREATE NEW JOBS THEREIN.

APPENDIX III

SURVEY OF NORTH CAROLINA BUSINESSES

SUMMARY

CRITICAL FACTORS IN NORTH CAROLINA'S ECONOMIC ENVIRONMENT:

A SURVEY

prepared for:

N. C. Commission on Jobs and Economic Growth

prepared by:

G. Donald Jud
Department of Finance
School of Business & Economics
University of North Carolina at Greensboro

August 1986

In June, the Commission on Jobs and Economic Growth asked the University of North Carolina at Greensboro, School of Business and Economics to conduct a survey of businesses throughout the state to help identify critical factors in North Carolina's economic environment, in an effort to better shape longer-run state economic policy.

During the month of July, questionnaires were mailed to 259 companies which had recently located or significantly expanded their facilities in North Carolina and to another 470 existing companies. Follow-up contacts were made by phone. Responses were received from 146 (56%) of the new and expanding businesses and 246 (52%) of the existing companies. This response rate put the overall margin of error of the survey within the 1 percent range.

Analysis of the survey responses which were obtained principally from interviews with chief executive officers (CEOs) of the selected firms revealed that companies locate in North Carolina mainly because of a need to be close to their major markets and because of labor factors, that is, the availability of labor with necessary skills, competitive wage rates, and the work ethic of the labor force.

The survey was able to compare the responses of businesses locating in rural areas and small towns in North Carolina to those locating in the state's major urban centers. In rural areas, cost factors such as labor and raw materials costs were more important location determinants than they were for firms in large urban areas. In urban areas, nearness to markets and the quality of air transportation were ranked as more important.

Survey responses indicated that North Carolina competes chiefly with other states in the Southeast, especially South Carolina, Georgia, and Tennessee. CEOs considered locating in other Southeastern states essentially for the same reasons that they considered locating in North Carolina, that is, because of nearness to markets and labor factors.

Among the secondary factors which also influenced the location decisions of the companies surveyed were public and business services and taxes. Only a small minority of CEOs stated that they would consider locating outside North Carolina because of lower taxes in other states.

The substantial majority of firms rated North Carolina's major public services as "adequate to good" compared to other states. Some companies, however, indicated dissatisfaction with the quality of the state's public education and waste management policies.

Many companies were not aware of the major business service programs (such as, labor training, small business assistance, etc.) offered by the state or felt that these services were not pertinent to their firms. But for those that did find the services relevant, most rated these services as adequate to good compared to other states.

Some firms were dissatisfied with the level of financial assistance, small business assistance, export assistance, and research and development assistance.

All of the companies in the survey were asked about improvements in public policy which they believed might make North Carolina a more attractive place for business to locate and grow. Foremost among the suggestions for changes in state policies were requests for more and better services and lower taxes. Businessmen wanted more and better labor training and assistance to small business as well as improvements in public education and state highways. They also wanted tax reductions -- especially income, intangibles, and inventory taxes. In general, businesses wanted the state's public sector to be more efficient, to provide more services at a lower price.